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NO. 5 • SUMMER • 1968 • ICD 50¢

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• A. HYATT VERRILL

The Three Suns of Ev
• EDWIN K. SLOAT

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Prize Winning Editorial
• MILES J. BREUER, M.D.

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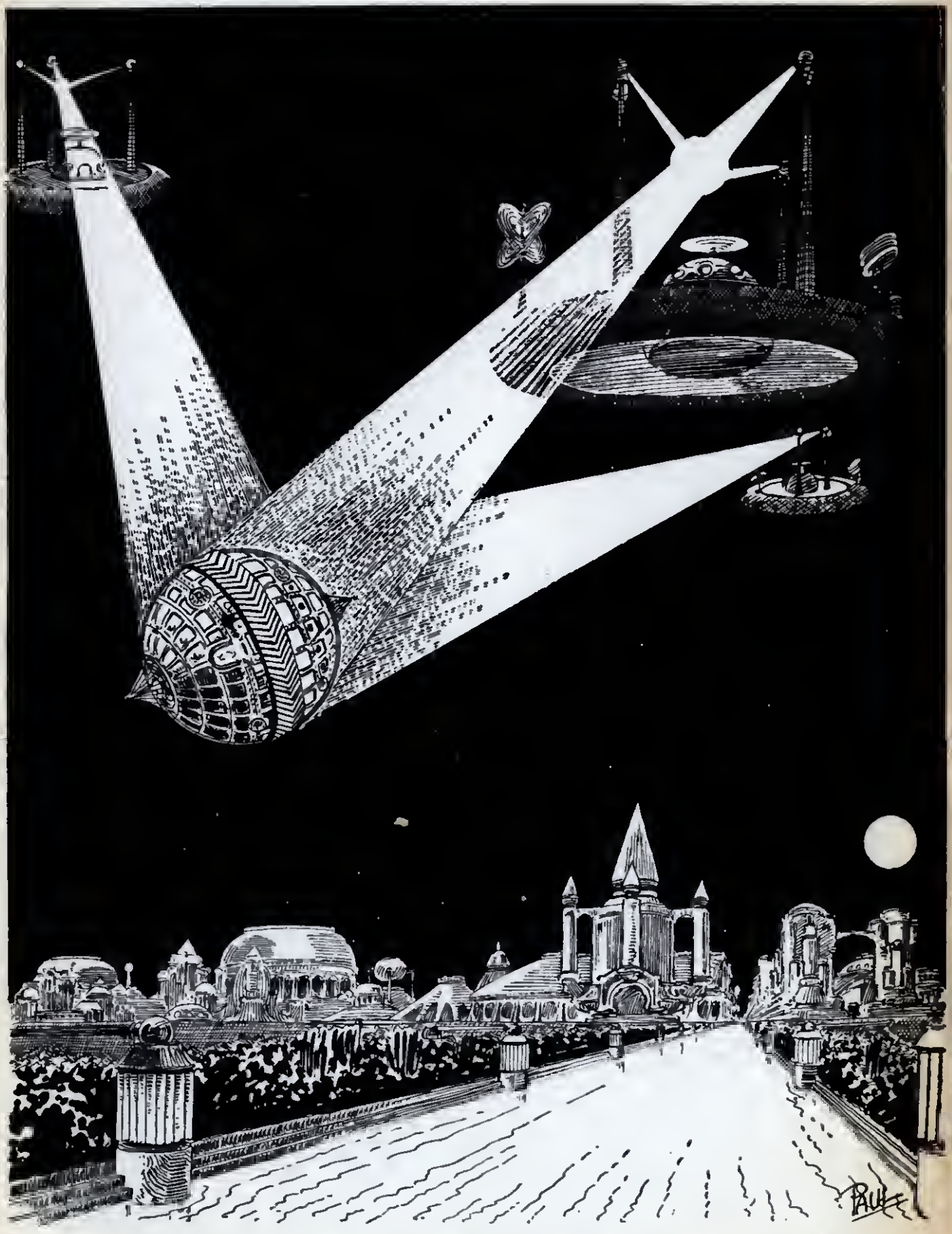

Münchhausen Departs for the Planet Mars.

SCIENCE FICTION CLASSICS

No. 5
SUMMER
1968

NOVELET

SHORT NOVELS

FEATURES

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"BARON MUNCHAUSEN'S SCIENTIFIC ADVENTURES"
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SCIENCE FICTION CLASSICS, is published quarterly by ULTIMATE PUBLISHING CO. Bayside, Long Island, N.Y. at 50c a copy. Subscription rates: One Year (4 issues) U.S. and possessions: $1.65; Canada and Pan American Union Countries $2.00; all other countries $2.50.

THE FUTURE OF SCIENTIFICTION

MILES J. BREUER, M.D.

In 1929, when Dr. Breuer authored this prizewinning editorial, S.F. was a howling infant with a hopefull future— Now that the future has come, we leave the decision as to how much growing up the field has done up to you, for frankly, this essay seems as timely today as it was then.

THE outstanding characteristics of every period in human history have been reflected in the literature of that period. Fiction, especially, is more free to concern itself with the everyday life of the common man, than is any other form of literature. In ancient times the hero of the common man was the warrior and the orator, and the epic poem, which is the fictional type of the ancients, contains nothing but war and oratory—unless it be love, which is common to all ages. The fiction of the Middle Ages is distinguished by religion and chivalry; that of early modern times, when men broke out of their narrow corner in Europe and explored the world, is distinguished by adventure and romance. In recent fiction, what do we find as the preponderating element? Industrialism, politics, finances. What men do in real life, they do in books.

Science in fiction is not new. I saw an account of a trip to the moon by one Cyrano de Bergerac, written in the sixteenth century. There must be older examples. But, stories of that type, like Mrs. Shelley's "Frankenstein," were few and far between; and certainly found a limited reading public.

Few men know or care anything about science. The average reader is not a student; he reads the familiar things that come easy.

It is only in recent years that Science has begun to invade the everyday life of the everyday man. Up to yesterday, science was a thing set apart; it dwelt in the sacred laboratories, which none but the initiated few might enter. Who wanted to write about it? Still less did anyone want to read about it? Today, science does for the common man in his daily life more marvelous miracles than the mightiest monarch of old could command. Did Solomon or Caesar ever ride as luxuriously as does your grocery clerk every Sunday in his Ford? Not only does the humblest of us have in his own home and under his hands such things as the radio, the electric washer, vacuum cleaner, refrigerator, the modern automobile; not only does he daily see such marvels as the airplane, the talking picture in colors, the wonders of surgery, of printing, of the phonograph, of telephony—but new things are constantly coming to remind him of the vast and thrilling possibilities of what is yet to happen.

The average man has ceased to

wonder at the miraculous accomplishments of science; it is all a part of his everyday existence.

Not merely the material *impedimenta* of science, but the thought and method of science are becoming part of the life of the people of this nation. The lives and efforts of a constantly increasing percentage of them are becoming involved in science in one way or another. A hundred years ago the proportion of people that came into intimate contact with it was insignificant. Today, who shall say what proportion is constantly occupied in one way or another, directly in the service of our mistress? All the way from the men at the head of great research organizations and teaching in the high institutions of learning, through engineers, medical men, manufacturers, on down to the humble repair man who "services" your radio or "finishes" your kodak prints, science catches the many in her net. All these people live with science, and more or less *for* science. In one way or another they *think* science. Their number is great, and it is constantly and noticeably increasing.

Is it unreasonable, therefore, to predict that an increasingly large part of our country's population will want science served up with their fiction, rather than war or chivalry or exploration? Is it far-fetched to suppose that the fiction-writer's imagination, which, to please the reader, has heretofore exercised itself on the heights of Olympus and in the African jungles, with black magic and the Wild West, will soon for the same reason have to delve into the atom, press out past the confines of the solar system, and deal with intricate apparatus? If war comes next to love in the writings of men, when everyone is occupied with war, will not science come next to love when everybody lives by science and almost everybody works with science?

Scientific fiction as a fine art is truly new. Rarely does any fine art spring fully developed from the brow of its goddess. Years, decades of painful evolution will yet be necessary before Scientifiction can take its seat at the banquet, fully recognized by her sisters, Drama, Historical Romance, the Novel, etc. Scientifiction of today is not yet perfect; and those of us who write it recognize that fact better than does anyone else. When we attempt to wed two such dissimilar personalities as Science and Literary Art, it is but natural that there should be a period of adjustment before conjugal life is perfect. But the point I make is, that progress is being made, *right now*.

AMAZING STORIES is a pioneer. Our Magazine is ineradicably down in history as the leader with the far-flung vision. A hundred or a thousand years in the future, men will point back to it as the originator of a new type of literary art. In the meanwhile, the art is spreading. Scientifiction is gradually creeping into general literature. Old writers are turning their attention to it; new writers are developing. Above all, public interest is increasing.

There is a great, fallow development going on at the present mo-

(Continued on page 25)

THE THREE SUNS OF EV

EDWIN K. SLOAT

Illustrated by MOREY

*This story is by one of our best known authors. His work, we are sure, will be greatly appreciated by those of our readers who like interplanetary stories. This one takes us beyond the solar planets to a very distant world. An interesting feature about it is that there is a lot of psychology in it, as developed on this strange and distant world. **

* This is the original blurb.

Chapter I

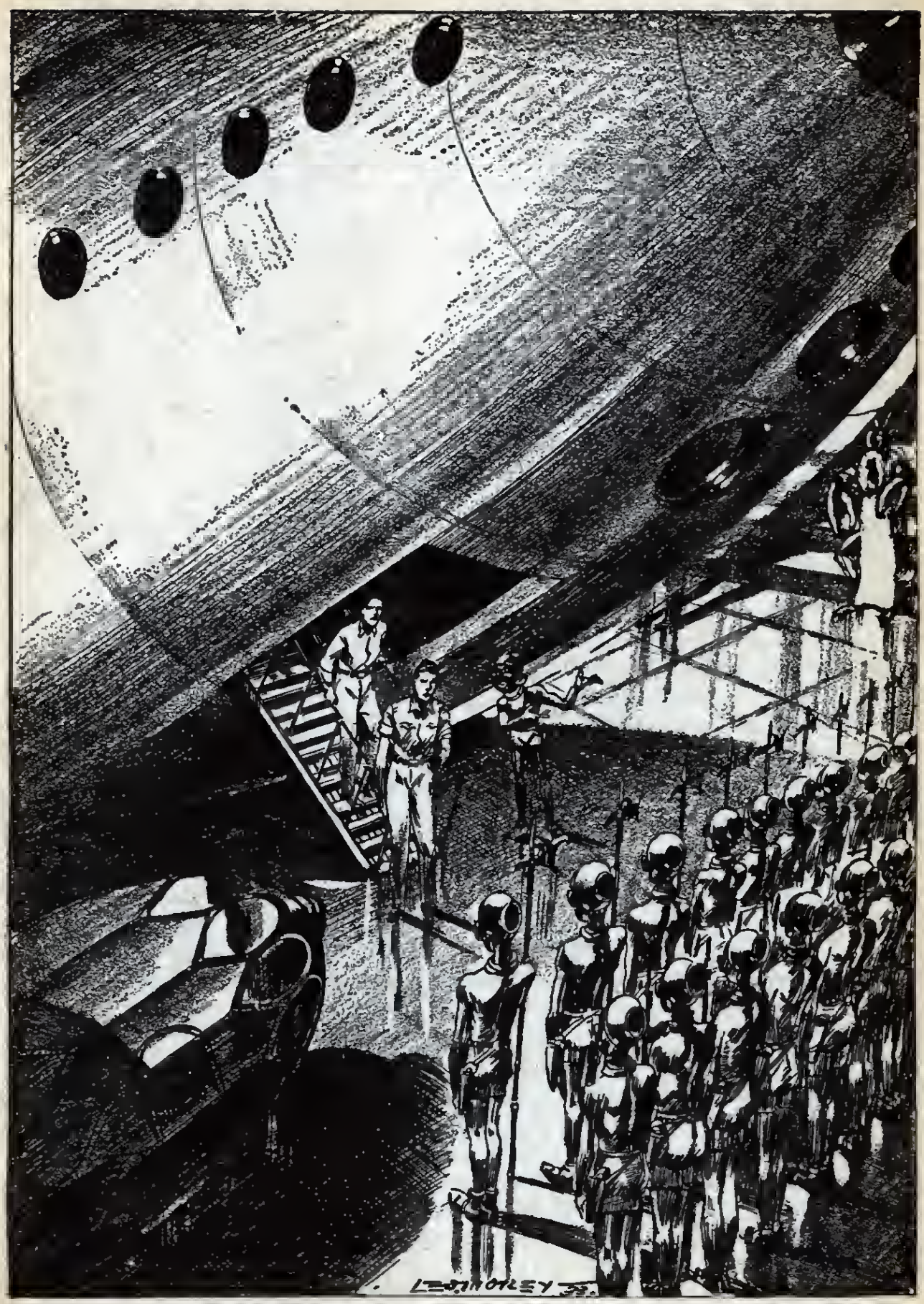
Professor Humphrey took the laboratory key from his pocket and handed it to Neis, our strange, little, dark-skinned man of all work.

"There you are, Neis," he said. "Go ahead and prepare your apparatus. When it is ready call us. Naturally I am quite curious to watch you upset the Theory of Relativity so casually. It is unusual, to say the least, that a scientist permits his house servant such liberties with his laboratory, but you seem to have a smattering of scientific knowledge and this experiment will give me an excellent opportunity to set you right in your absurd argument. Run along."

There was a strange air of triumph about Neis as he hurried from the room. It filled me with a vague uneasiness, for it followed too closely the nameless anxiety I had seen in Winifred Humphrey's big eyes when he made the proposal. Woman's intuition? Call it what you will; she was afraid.

My stealthy glance sought the small, wistful oval of her face across the table and dwelt there in secret adoration. Then I knew that Grant was watching me, and I flushed with anger. It was none of his business if I chose to look at Winifred. She did not belong to him. Or to me either—yet. I turned to meet his flashing, jealous eyes glare for glare, until some casual remark by Professor Humphrey drew Grant into a discussion about our work.

The hour was late. I excused myself and retired to my room for the night. As I turned in I wondered a little why the presence of Neis should suddenly cast a shadow over our little hilltop haven, where Professor Humphrey and Winifred, and Grant and I, his two assistants, worked and lived so happily together. Happily? There was Winifred. . . . Well,



the ring was in my pocket. In a few days Grant would have visual proof that he had no chance.

It seemed to me that I had scarcely closed my eyes when I heard someone tapping at the door. I arose to find Neis standing in the dim light of the hallway.

"I am ready to perform the experiment," he said quietly, "if you will dress and come down to the laboratory, please."

Hastily I donned my clothes and descended the stairs. I gave no thought to the odd time, which didn't seem so odd after all, due to the kind of work we were engaged in. It was the memory of the fear and uneasiness in Winifred's eyes that filled my mind.

She and Professor Humphrey and Grant were waiting near the observatory-laboratory building when I joined them. The darkness of the night was already lessening in the east where the foothills were silhouetting themselves sharply against the graying sky.

"This way, please," said Neis, and to our surprise led us not into the laboratory, but round the end of the building to its opposite side.

Winifred gasped, and the professor gave a grunt of astonishment. Grant and I could only stare. Could that be a dirigible balloon, that vast thing looming there before us? Something scuttled across the rocks behind me with a metallic scratching. I whirled about and stared. Nothing could be seen in the darkness. Abruptly a brilliant glow burst from the massive thing before us as lights inside it were snapped on, revealing a long, vast, glittering cylinder of transparent cyrstal.

It lay horizontally in the air, like a vast zeppelin with one end touching our hilltop beside the building. An entrance port in the bow stood open. Neis was beside it, beckoning and grinning.

Winifred shrank back. I gaped in horror at a huge crab-like monster nearly as large as a horse which crouched behind Neis with antennae waving, and with its popping, beady eyes fixed intently upon us. There were others. We were surrounded!

Professor Humphrey gulped down his amazement and scowled.

"What foolishness is this, Neis?"

"Only a portion of my experiment, Professor. If you and your companions will be so kind as to enter, we can proceed."

"I'll enter nothing! Furthermore, I'm going to break your neck for getting me out of bed at this unearthly hour to witness your horseplay of fakir's tricks. Mass hypnotism, I presume, but I'll have no more of it!"

I glimpsed an opening between the monsters at my left. Seizing Winifred by the hand, I sprang for it. But a monster behind us darted aside with prodigious speed to block us. I swerved. Winifred screamed. Then a huge claw slapped me, like a blow from the flat side of an ax, and I went down.

I opened my eyes inside a roomy compartment in the vast cylinder. Professor Humphrey and Grant were there, nursing minor wounds, and Winifred was holding my head in her lap. In her eyes was such anxiety that in spite of my splitting headache and our critical situation my heart thumped wildly. I smiled

at her reassuringly and sat up.

Outside the cylinder the monsters were scuttling about in a frenzy, looting the laboratory and observatory of instruments, books, tools and records, all of which were being brought into the cylinder.

Everything outside was plainly visible to us through the transparent walls, even the laboratory building forward, and the night sky back of it with its paling stars. Only the inner portion of the cylinder, which extended its full length, was opaque, veiled by smoky-hued crystal.

Our own compartment was bare save for eight or ten low pallets, all fastened to the floor, each with silken sheets and pillows.

The last monster came scuttling aboard with the remaining portion of Professor Humphrey's massive little reflector in its claws. The entrance port slid shut behind it. Instantly there was a pressure against our feet, and we realized, in growing alarm, that this incredible cylinder was rising from the ground.

In dismay we watched our hilltop observatory and home dwindle beneath us in the gray dawn as we floated higher and higher. Presently the golden beams of the morning sun caught us from beyond the distant mountains, and the world below grew hazy, purple and flat.

Professor Humphrey dashed to the entrance panel of our compartment and thumped madly on it with his fists, bellowing for Neis.

The little dark man appeared presently in the passage outside the panel, grinning blandly. The professor shouted wrathfully for him to open the panel.

"No need to shout, Professor," remarked Neis calmly, his voice coming to us distinctly through the crystal wall. "I can hear you quite well when you speak normally."

"Where are you taking us?" roared Humphrey, purple with rage.

"I doubt very much if I could tell you, since you have no name for our planet," replied Neis indifferently. "It is one of those invisible worlds you term 'dark stars', because it is too far for the reflected light upon it to make itself visible to your astronomers. Our name for it is Ev. It is really quite far from here."

Humphrey gasped. We all did.

At that instant there appeared in the passage a huge, venerable crustacean monster.

"Where is the scientific library, On?" it asked of Neis. "I have watched, but failed to see it brought aboard. All I beheld was a few score volumes such as a beginning student might possess."

I was startled, for instead of using words, the monster made only clicking, grating sounds which in some way registered telepathic thought images on our minds. Before Neis could answer, the monster caught sight of us.

"What sort of mammalian vertebrates are these?" it clicked. "Your cousins?"

Neis pointed at Professor Humphrey.

"There is the knowledge you sent me after," he said nervously.

The beady eyes surveyed Humphrey skeptically.

"How can that be?" clicked the question.

"Locked up in his brain case," explained Neis eagerly. "He is one of the leading scientists of the earth,

and worth more than an entire library of scientific treatises. The extraction of that knowledge is up to your psychologists. The man is opinionated, rude and overbearing, but he should offer no problem to your mind-masters."

The crab monster was not overly pleased. We could feel the tinge of annoyance in its thought emanations.

"I fear you bungled your task, Neis," it grated. "We send you for a scientific library, and you return with this thing. For general knowledge your vertebrate is, perhaps, better than a specialized library, but for exactness and detail such as we need, its mind is likely to be hazy. We shall hope that I am mistaken, for there is no more time to waste. You were too long on the planet. Why?"

"There was no chance to get in touch with you sooner," said Neis anxiously. "You were right, of course in judging that your superior selves would have no chance of getting what you needed without terrifying and antagonizing the inhabitants of the earth with your appearance. But I fared no better. I am of the same structure as themselves, but because of my dark color I was promptly mistaken for a member of an outcast earth-race, and as such had no chance to get into any laboratory and signal to you. It was only tricking this vertebrate scientist into a foolish argument over an ancient and well-known fact that I managed to gain the use of his laboratory and set up the signaling apparatus to call you. Otherwise I should still be stranded back there on earth."

The monster indicated Grant, Winifred and myself with a questioning gesture of its claw.

"They are merely three other vertebrates who chanced to be with the scientist," explained Neis with obvious relief. "The female is his daughter. She should make a welcome addition to the Keron's seraglio, since none of his hundreds of concubines have a white skin like hers. The two young males, who both wish to possess her, are merely assistants to the scientist. I thought it best to bring them along."

The crustacean made no comment. As it scuttled away along the passage, Neis busied himself at a tiny control board in the crystal wall near the entrance panel.

I turned away, for my wondering eyes were irresistibly drawn to the vast curtain of eternal space unfolding about us.

Winifred gave a strangled cry. I whirled around. She was clutching her throat and swooning. As she collapsed, Grant and I caught her between us and laid her on one of the pallets. A strange, sweetish odor was filling the compartment. I gagged, coughed and strangled. Grant, too, was doubled up in a paroxysm of coughing. Professor Humphrey had already fallen across one of the pallets. My head was swimming, and a dull sluggishness was weighing me down. Some sort of vibration was dinning at my nerves.

Dimly I saw the star-dusted velvet of the abyss blurring and distorting through a thickening film of frost now forming on the crystal wall. An iron, cold, as though from interstellar space, was numbing my limbs.

My last glance beheld the evil, grinning face of Neis at the panel. Then a wave of darkness blotted him out

Chapter II
A World with Three Suns

Shooting, darting pains. Red-hot needles playing on the flesh. An iceberg thawing, with trickles of water running through it. Horrible, endless nightmares. And I realized that I was awake. The stiffness and pain of trying to move were intolerable. I must have slept in a frightfully contorted position to suffer so, I thought, and lay long before I attempted to move again.

At last I made another trial, and sat up with a groan. Memory rushed back. I twisted about anxiously and stared at Winifred sleeping on her pallet nearby.

She was breathing feebly, and the weird, gray color of her face alarmed me. I reached stiffly across the space between our pallets and touched her cheek. It was icy cold, and was covered with an impalpable coating of fine dust.

Thoroughly frightened, I fell off my pallet, trying to get to her, and lay helplessly on the crystal floor staring down into the bottomless depths of space at the galaxy of flaming suns that were like winking, colored jewels.

As I struggled up again, I saw that Winifred's breathing was more normal. Some faint echo of the torture of my own awakening was reflected in her face. Reassured, I turned to Grant and Professor Humphrey. Both were near to waking.

Crimson light that streamed back from the bow of the space ship claimed my attention. I stared and gasped in admiration. Lying far ahead of us in the void was a brilliant, crimson sun that shot its fiery streamers far into space. It was stupendous, overpowering. In what portion of the heavens could there be such a star?

Familiar as I was with the constellations, I could recognize none of them here. I ogled in wonder. Was that a spiral nebula? It could be nothing else. And visible to the unaided eye! How far, how vastly far, we must be from home. Vainly I stared aft, trying to pick from the pinpoints of light, that strewed the ebon curtain of space with glittering dust, the single point of light that was our sun, our yellow, stunted dwarf of a star with its family of planets and our own beloved earth.

There was a movement behind me. I turned. Grant and Professor Humphrey were on their feet, staring in awed silence at the mighty crimson sun. Winifred was beside them. Presently she turned and gazed at me with a tremulous smile.

We were standing thus when Neis appeared in the passage. From his haggard appearance I gained the impression that he, too, had been in the same kind of a sleep, that we had experienced—as, indeed, he had.

"Our arrival will be a great event!" he exclaimed. "My people, the Ons, have talked of nothing else for years, I suppose, and even among the Thaks, the great crustaceans, it has doubtless become a legend."

Professor Humphrey stared at him oddly through the sound-transmitting, crystal wall.

"You say this planet of yours is a long distance from earth," he said. "Just how many hours have we been on the journey?"

"I can't tell you that, Professor, but, computing it roughly, earth time, about four hundred years."

"What?" exlaimed the startled scientist.

"You have slept," explained Neis. "Not in the sense that you know sleeping, but with animation suspended and sustained by the eos vibration, and your bodies frozen solid to prevent the slightest ageing or decay, you have passed through that period of time."

For the first time since I had known him Professor Humphrey had nothing to say. I believe he was just beginning to believe the incredible things that were happening to us. He ran his fingers aimlessly through his bushy hair.

"I should have thought that there were inhabited worlds nearer to yours than is our earth," he mumbled.

"Plenty of them," Neis assured him. "But your earth and our Ev are of about the same size and density. Their atmospheres are of practically the same composition. Life on both planets has evolved much along the same line. That is why the Thaks selected your world. They reasoned that science on your planet must have evolved somewhat as ours has, and for that reason you could help us solve our great problem, if it is solvable. I am still convinced that a single, trained scientific mind brought to bear at the scene of the problem will aid us more than all the scientific libraries we could have brought."

Professor Humphrey seemed strangely older. Perhaps it was the shock of suddenly realizing that all his acquaintances and the generation that looked up to him with the respect due a great scientist were dead and gone these four centuries.

"What is this problem confronting your people, Neis?" he asked quietly.

Neis swept his arm about in an expressive arc.

"The three suns of Ev," he replied dramatically. "They are tearing our world to pieces!"

Professor Humphrey gaped at him a moment, then laughed, a short, hard, bitten-off sound. Winifred, Grant and I stared. Neis paid no heed. Earnestly, eagerly he was explaining.

"Our three suns comprise what you astronomers of earth might call a triple star. They are Mal, the big crimson sun shining ahead of us there, Xol, the huge blue sun that is off to the left of us now and is hidden by the opaque portion of the ship, and Thov, the yellow dwarf of a sun that is just coming into view there below our feet.

"Our planet, Ev, hangs spinning in the triangle formed by the three, and the three suns revolve slowly around it.

"For untold millions of years the resultant of the forces of the triangle was in equilibrium. Then the giant blue Xol, with his superior gravity pulled little Thov slightly toward him—or so the older school of scientists claim. At any rate Thov has for some reason or other gotten out of place and has upset the delicate balance of our system.

"Ev has begun to swing back and forth a trifle. Either the conflicting pull of the three suns, or atomic disintegration set up by the spinning of our planet in a new and unknown electrical field created by the changed positions of the three suns—these are the two principal schools of scientific thought about the phenomenon, and they have nearly caused civil wars both among my people and among the Thaks—is the cause of the threatened destruction of our world. Violent temblors, increasing volcanic activity and enormous, erratic tides have been hinting at our approaching doom."

Professor Humphrey laughed harshly.

"I am deeply honored, I see, to be the one man from earth selected for this simple task of setting things aright in your peculiar solar system," he observed bitterly.

Neis stared at him with sudden terror in his eyes.

We were nearing Ev swiftly, and soon pierced its atmosphere that was like an ominous red pall of volcanic smoke and dust under the green crimson sun. The four of us knelt down and gazed through the transparent floor at the strange, passionate, red beauty of the world below with its winding rivers that seemed to flow with blood, and the mighty, fantastic crimson forests sprawling all across the lands, with gleaming, red highways threading through them and bordering the purplish seas to tie together the grotesque cities that were carelessly flung here and there.

After a time patches of blue shadow could be seen here and there on the hilltops, shadows that grew and mottled the crimson ground, until it changed to a deep purple and then faded into a fierce, ghastly blue, as mighty Xol, sweeping up over eastern horizon, began his brief rule by changing the alluring red world into a stark, nightmarish place.

Grant drew his hand across his eyes.

"What a madhouse of a world to come to," he muttered.

Long before we arrived at Xanakon, the capital city of the crustacean Thaks, we were aware that a mighty celebration was already in progress there. We knew, too, that in Xanakon the Keron, the dissolute, hereditary, powerless ruler of the subjugated, dark-skinned Ons, had his palace.

Small crystal ships flocked in from over the horizon and swarmed about our huge craft as we sped along. They were filled with Thaks who studied us through curious double-lens reading glasses a foot or more in diameter. Doubtless the monsters were in constant communication with the Thaks aboard our ship.

We were freshly bathed in one of the deep pools of sea water aboard our huge ship in which the Thaks whiled away so much of their idle time, when we came at last to the huge city of Xanakon beside the blue Lublathon Ocean, an ungainly metropolis which sprawled across the low land beside the sea and rested its Thak quarter on the cliff's high above the lower city. Thov, the amber-flamed sun, was now filling the world with his nearly white light.

Off to the north three volcanoes spewed great clouds of smoke and ashes into the air. Neis, who was standing with us, eyed them uneasily.

"They weren't in existence when we left," he muttered. "The situation must be far more serious than I feared."

The great space ship swung about over the lower town, for all the world like a big dirigible balloon back home on earth, and the subjugated Ons, like bees in a hive, swarmed out on their roofs and blocked the streets to wave and shout frenziedly up at us. We could hear nothing of the cheering, for the outer walls of the ship were sound-proof.

Then our huge ship floated toward the cliff where the Thaks had their government buildings and palatial estates. We hovered over the vast, domed, council hall, and settled down until the bow touched the marble plaza before the main entrance.

Silently we followed Neis out to meet our fate, whatever it might be, outwardly calm, but inwardly tense and apprehensive.

Chapter III
The Death Sentence

A score or more of venerable monsters were awaiting us. I was a trifle surprised that there was no crowd of spectators, but it was evident that the teeming Ons of the lower city were not allowed up here—only Ons guardsmen—dark, lean little men with swords and slug guns, who stood rigidly at attention, eyeing us with curious side-glances.

We halted in the center of the plaza, and Neis advanced alone to confer with a Thak which wore about the base of its big claws bands of gold inset with rubies. Presently Neis returned to us. His face was gray, and in his eyes was more than a hint of panic and fear.

"Professor Humphrey, you are to go at once to the Council Chamber where the psychologists are already assembled," he said hoarsely. "I am to accompany you. You other three will be taken around behind the building to the open prison yard for the present."

"What is the matter?" cried Winifred.

Neis gulped and glanced over his shoulder at the waiting Thaks.

"Conditions are alarming," he said hurriedly. "For years now the Thaks have held their space ships in readiness for instant flight. Had we been a year—perhaps but a month or a week—later, we might have come too late. Everything now depends on Professor Humphrey. Come."

Professor Humphrey turned to us. In his eyes was a look such as I had once seen in the eyes of a doomed man mounting the gallows, but he remained grimly silent. He gripped Grant's hand and mine, kissed Winifred tenderly, and marched away without a backward glance.

Winifred cried out, and Grant with a curse started after him in a hopeless, suicidal rescue attempt. I caught his arm.

"Not that, Grant," I said a trifle

unsteadily. "Winifred needs us worse than ever now."

He scowled, but said nothing. Half a dozen armed guards marched us round the building with its marvelous beauty of carved stone and brilliant flowers to a big prison yard paved with stone and enclosed by an iron fence. We were thrust inside and the massive gate locked behind us.

Winifred burst into tears. Grant glared at me sullenly, then turned away abruptly, and began to make a search of our prison. I joined him.

"Why don't you go and comfort her?" he asked bitterly.

"I think she would rather have her cry out alone without either of us to annoy her," I answered.

He mumbled something I could not catch.

"Besides," I continued, "we've got to find a way to escape from this hellish prison yard and take her with us."

"A lot of good that will do," he sneered. "How will we get back home?"

"They want Winifred for this knave Keron's harem," said I evenly. "We've got to save her from that—escape out into the open country. Then we can plan some way to rescue Professor Humphrey."

He gave me a grim look.

"Of course," he agreed shortly.

A quarter hour's search proved to us conclusively that escape was out of question. As we returned to Winifred and sat wearily down beside her, the stones heaved up beneath us and settled back. An ominous rumble filled the air.

We started up in terror. A long jagged crack serveral inches wide had opened in the prison yard almost beneath our feet. Violent as the 'quake had been—back home on earth it would have thrown people into a wild, senseless panic—no shouts, cries, or other evidences of excitement came from the lower city. Outside the fence the guards seemed unaware that anything extraordinary had occurred. Hundreds of such tremblors, thousands of them, had numbed their nerves.

As we seated ourselves again Winifred heaved an anxious sigh.

"I wish Daddy would hurry up and come," she said.

Neither of us answered. Grant must have been thinking the same thing I was: that we would never see Professor Humphrey again.

The unnatural stillness continued. It was as though the entire populace of Ev were tense and waiting—a taut, electric silence that conjured up visions of silent, fearful crowds in the streets and homes waiting for news, waiting for word from the vast council chamber where the crustacean scientists worked with the lone prisoner from earth, from whom they hoped to get the secret of saving Ev from its three suns.

In the east the pink sky heralded the coming Mal for his third of a day's reign in crimson majesty. A titanic, convulsive heave of the ground pitched us forward on our faces. A thunderous crashing sounded behind us, as half the rear wall of the vast council hall collapsed. The guards outside the fence were thrown down. As they struggled to their feet, shouting in terror, a sec-

ond, more violent 'quake hurled them down again. In the distance one of the volcanoes dissolved in a mighty cloud of steam and smoke, that flashed with stabbing swords of yellow light and shone a ghastly red under the rays of rising Mal.

From the lower city arose the shrieks and wails of the injured and dying. Then came a roaring, far out to sea, as a gigantic, ravening tidal waved reared itself up from the ocean depths and hurled itself on the stricken, gasping city, then rushed back out to sea again, carrying struggling drowning thousands to their death. A smattering of Thaks must have been caught by that wave, but not many, for the Thaks had withdrawn to the cliffs with their waiting space-ships near at hand.

White and shaken we sat up, not knowing what to expect next. Terrified Ons, servants in the palaces of the Thaks, came fleeing past in aimless terror, some even running headlong into the iron bars of our prison yard fence, picking themselves up heedless of blood and bruises and resuming their panic stricken flight. Here and there scuttled a huge, excited crustacean.

The prison gate clanged behind us. Winifred cried out and started up eagerly, then sank back. Neis lay a-sprawl on the hard stones inside the gate, where he had been flung by the guards. As we hurried to him we saw that one arm had been badly mangled by the claws of a huge Thak.

"Where is Professor Humphrey?" demanded Grant.

"He failed us," replied Neis stoically, heedless of the pain of his injured arm. "The psychologists placed him in the cataleptic sleep and probed his mind. They found nothing of value; he had no knowledge or ideas with which to combat the suns. They probed deeper in their frenzy. And all the time, torn between anxiety and fear, I hung about near the great slab, watching him. After a time Alakus, chief of the Thaks, stared directly at me.

" 'They are primitives, these earth vertebrates,' he said. 'We shall not even bring him back to consciousness. You have failed us, Neis.'

"I fell down on my knees and begged for the privilege of drinking the fungi. Alakus caught my arm in his great claw and was about to pinch it off, but he changed his mind. Instead, he gave the permission to drink, then ordered me to be thrown into the prison yard, to lie there until the slow death claims me. Professor Humphrey is dead. I shall be soon. It is all over."

Winifred cried out, a tremulous, despairing wail that wrenched my heart strings, and fainted dead away. As I eased her down to the ground, I realized that Grant had Neis by the throat.

"Stop!" I shouted, springing up.

"He killed the professor with his hellish plan!" sobbed Grant as he jerked the helpless, strangling Neis savagely about.

I struck desperately at Grant's wrists, breaking his grip. Was it a flicker of gratitude that shone in

the staring eyes of the little man as he collapsed? I caught but a glimpse, for Grant, cursing wildly, turned on me. I flung my arms about him, pinioning his own arms to his sides.

"Steady, Grant," I panted, our eyes a scant six inches apart. "Professor Humphrey is dead—Heaven help him—but another murder will not better us. Neis is doomed anyway. Save your strength. You will need it—Winifred will need it!"

He relaxed sullenly.

I glanced again at Neis. There was no mistaking the gratitude in his eyes. Doomed to die though he was, he, like any human of our own far distant earth, was thankful for the little respite I had gained him from Grant's choking fingers.

Winifred sat up weakly and smiled at me. She seemed not to realize our desperate plight. Even the death of her father was thrust into the background of her mind for the moment.

Grant saw the smile, tore his eyes from us in a sudden torment of jealousy, and turned to Neis.

"What do you mean when you say 'drink of the fungi'?" he forced himself to ask the little man calmly.

"Ons and Thaks alike who are doomed to die are sometimes permitted to drink the spores of white fungi in solution," answered Neis through set teeth, for the first agony of his fatal potion was upon him. "Nothing can save the victim. The fungi slowly eat him. Death usually occurs after about ten days of your earth time. Sometimes much sooner."

"Poor man," murmured Winifred, as he squirmed in agony with beads of sweat standing out on his dark brow. "Is there anything we can do to ease the pain?"

Neis stared at her. The convulsion was passing. In his eyes was an awed wonder.

"You who are to be a slave of the Keron feel sorry for me, who stole you and brought you here?" he asked in bewilderment. "What strange, unbelievable marvel is this?"

Grant's face contorted with rage. He would have completed the job of killing Neis then and there, if I had not stopped him. There was about Winifred's small, wistful face a poignant, spiritual beauty as she replied:

"Among our people on earth, Neis, we have a saying that comes down to us from One Who was being persecuted unto death. He was speaking to His Father, who is our God, and, although in great agony, He pleaded for His tormentors, saying, 'Forgive them, Father, for they know not what they do.' That is the way I feel about you, Neis. You have done us all a great wrong, have been the cause of all our deaths, but you didn't realize that you were doing it. And it has cost you your own life. I forgive you, Neis."

"I don't!" shouted Grant, surging forward in spite of my clinging efforts to hold him back.

Neis paid him no heed, for he was wrestling with a new and startling idea—that of forgiveness—something utterly foreign to his own life.

Chapter IV
"A Thin, Desperate Chance!"

The sky was growing darker. I glanced up to behold a great cloud of smoke and dust from the exploding volcanoes spreading across the heavens and slowly obscuring the bloody light of Mal. Underfoot the ground was vibrating as though a terrific diastrophism far down in the bowels of the planet was slowly, and relentlessly tearing it to pieces. It is the process or processes by which the earth's surface is changed, producing ocean beds and mountains and other cosmic features.

Suddenly there burst on our ears a strange, terrified squawking, and out of the crimson murk burst a cavalcade of four-legged ostriches, or something very like them, running in pairs, tandem fashion, and carrying between each pair a closed sedan, or covered chair. They drew up with a fearful racket at the prison yard gate.

Out of the sedans sprang a company of armed men, headed by a veritable giant of a captain who peered through the bars of the gate and saw us, then began to shake the gate and bellow for the guard.

"Keron's men," muttered Neis. "They have come for the girl. No danger is too great, or occasion too important to cause the Keron to forget a new and beautiful slave. Don't try to stop them, or they will most certainly kill you."

Grant and I paid no heed. Frenziedly we sought for weapons in the barren prison yard. One of the guards shattered the lock of the gate with a slug gun, and the rest swarmed into the prison yard.

Grant found a broken iron bar in the fence, and I managed to wrench a loose stone from the paving. We charged the guardsmen. Grant's bar whirled down, smashing the skull of the foremost man. My stone saved Grant from death at the hands of the second.

We heard Winifred scream. The huge captain had caught her up, flung her over his shoulder, and was running out of the prison yard in spite of her frantic efforts to free herself. Then we all went down as the ground heaved convulsively with a new 'quake. Slug guns were crashing, but their missiles went wild of us.

Next instant the panic-stricken guards were racing out of the prison yard after their sedans which were vanishing in the red murk with the birds squawking terrifically.

We plunged for the gate. Neis rose up in our path and halted us. Grant drew back his fist, but checked himself in amazement. I could scarcely believe my ears, for of all the marvels that had befallen us on this astounding adventure here was one that outshone them all, this unbelievable change in Neis.

Who can say whence it sprung? From my saving of his life a few minutes before? From Winifred's sweet forgiveness? From some incredible change within himself? Who can say? Whatever caused the metamorphorsis, a strange, new Neis was speaking.

"The special space ship," he was saying eagerly. "It is still moored at the side of the Council Hall. The

Thaks are boarding their other ships. The special ship will not be taken because the provisions are exhausted and fresh water is needed. It would be certain death to——"

"But Winifred!" I broke in hoarsely.

"I know, I know. You will have to rescue her from the Keron's seraglio—a thin, desperate chance. There will be the hubbub and flurry of boarding his ship, and you may succeed. I shall show you the way, but I can help but slightly in a fight, for the fungi are at work, and my one arm is nearly useless."

Grant and I seized him between us and dashed pell-mell out of the gate and off through the deepening, crimson murk of dust and smoke, across the wrecked grounds of beautiful estates and winding marble roads, till we came to the edge of the cliff overlooking the raging Lublathon Ocean.

At our feet a narrow stairway supported by two spidery steel cables dropped down fifty feet into a vast hanging garden that still clung to the side of the cliff above the ocean. Through the red murk we could see overturned statuary, urns and huge flower beds all coated with the red, descending snow of volcanic ash.

Neis collapsed at the head of the stairs, his thin body knotting itself in the agonies of a fresh, stronger convulsion.

"Go on down!" he gasped. "Follow the main pathway through the garden and you will come to the harem. The women may be out in the open now, and the girl should be among them unless she has already been taken aboard the space ship that floats above the palace. Be careful; the guards will shoot you on sight. Bring her back. Hurry, hurry!"

He literally forced apart his pain-locked arms so that he could give us the swords of the two slain guards in the prison yard which he hugged to his chest.

Down the narrow, quivering stairway we plunged, at times swinging out over the savage, crimson water we could hear thundering two hundred feet below, at the bottom of the cliff, and back again over the garden still hanging tenaciously by its massive girders and cables, in spite of the terriffic 'quakes that should have shaken it into the ocean long before this.

We leaped from the bottom step and raced desperately along the wreckage strewn walk until the frightened screaming of women and hoarse bellowing of guardsmen just ahead in the mist warned us that we were near the harem.

We slid to a stop, straining our ears. What strange, unfamiliar dangers lay just ahead, we could not guess. We must plan something, anything! Then out of the murk burst a slender girl in robes like ours, an escaped prisoner fleeing for her life. Winifred! She saw us and screamed a warning. I stared in horror at a big, black, pot-bellied eunuch hard on her heels with upraised knife. We could never reach her in time.

Then I realized that I had hurled my sword, saw it leave my hand in a whirling red blur of speed, saw the flat of the heavy blade strike the ugly pot belly with a terrific slap. The eunuch stumbled and fell.

With Winifred between us Grant

and I were racing madly back toward the stairway with the thud of pursuing feet in our ears. A backflung glance revealed the huge captain of the guard and a dozen men a scant hundred feet behind us. We spurted frantically, gasping and coughing as the acrid dust and smoke bit at our throats. Every instant I expected to hear the deadly crash of slug guns, but our pursuers held their fire, doubtless fearing that they might kill Winifred.

Would the stairs never appear? Then Grant shouted wildly, and the next instant we were pounding madly up the steep steps to the top of the cliff. Hard behind clattered the pursuit.

Winifred was ahead, Grant next and then myself. Suddenly I stopped and turned back. I could delay the pursuit a little while. If only I had my sword! But Grant thrust himself past me down the steps. I tried to stop him.

"No you don't!" he gasped, as I clutched futilely for his sword. He broke free and gave me a shove upward. "Get up there where you belong."

His eyes were dancing as he swung high the sword, its bright blade flashing crimson in the red light. Winifred above us cried out in protest. Then I glimpsed slug guns in the hands of the guards below.

Grant saw them, too. Down the steps he plunged straight at the bunched Ons. The huge captain lunged up at him. Grant managed to duck back and escape the deadly point. Then a mighty, cleaving blow from his own blade sheared down through the snarling dark face, and the captain died before his collapsing body struck the steps and slid out under the cable to drop into the sea.

Grant whooped in joyous triumph. Again and again his ruddy sword clove and stabbed among the milling, screaming guardsmen. A slug gun crashed. The missle struck fair. Grant clutched the cable to keep from falling. He turned and looked up at us. There were triumph and reckless gladness in his blazing eyes. He swung high the keen, heavy blade and struck down through the right-hand supporting cable of the stairway.

The steel parted with a snap that nearly threw me into the ocean. The stairs now hung crazily by a single thread, and Winifred above me clung desperately to keep from falling. Keron's men struggled madly to get down into the safety of the garden again. Slug guns crashed anew. Grant jerked oddly under the impact of their fatal bullets, but steadied himself grimly. Again the bright blade whirled down.

The remaining cable snapped in two. The guardsmen fell, screaming wildly, missed the edge of the garden, and went hurtling down into the turgid, lashing waves far below.

Grant still clung to the broken stairway, clung with grim, deadly determination. I can see him now—I shall always see his glazing eyes in the pale face staring up at me against that dull, ominous, red background of the murky sea below.

"Hang on, hang on! I'm coming!" I cried frantically, and started down to help him.

He shook his head and smiled weakly.

"Go back—to Winifred," he gasped. "Luck—happiness—good-by."

He stared up past me at Winifred, his eyes aglow with their message of unspoken devotion. His hand waved a brave, weary gesture of farewell. Then he deliberately loosened his hold. Down he plunged toward the ravening waves, and the red cloud that overlay them swallowed him. Winifred's sob came down to me as I hung there, straining my eyes vainly for another glimpse of him. The supreme sacrifice for Winifred, for me had been made . . .

Chapter V
Cataclysm

White and exhausted from the dreadful climb up the crazily swinging stairs, Winifred and I clawed our way to safety on the top of the cliff. Neis lay in a pain-twisted heap on the ground, his drawn face the color of pink putty from the untold agonies of his living death. Yet at the sight of us his eyes lighted up with fire of deathless determination to win this last fight of his life—this strange battle that two strangers from another planet might live, even though he himself was hopelessly doomed.

He could not walk, so I caught him up in my arms. Through the deepening murk and the wild, thunderous roaring we ran. Across the wrecked estates, back, back to the great Council Hall. Beneath our feet the ground was now heaving with ominous regularity.

With Winifred helping me we came at last to the wreckage of the prison yard and the vast, ruined bulk of the Council Hall. Round it I staggered half wild with fear, lest the great space-ship should be gone—it was almost inconceivable to think that it would not have been taken by some of the refugees.

Winifred cried out with joy when we saw it waiting there grim and majestic, its nose almost against the rubble of rock that had once been the wall of the huge building, and the entrance port a scant yard above the ground. Neis, who was again recovered, ordered me to let him down. He hurried to the ship.

There were scratches in the crystal about the closed entrance port, showing that someone had tried vainly to get into the ship.

"The Thaks took care of all their own," said Neis, as he wrestled with the hidden mechanism of the lock, presently opening it. "Ons, my people, must have tried to get in here. I wonder where they are now?"

He glanced about anxiously, but the lowering, lurid pall revealed no one.

A mighty explosion, a cataclysmic reverberation seemed to shatter the universe. The ground rocked wildly. Then it settled a full foot. A sudden quiet, a menacing, deadly stillness gripped the world like the breathless instant before a storm.

Neis struggled frantically to his feet, tugging feebly at Winifred and myself.

"Into the ship! It is upon us!" he screamed.

In a panic I seized Winifred bod-

ily and threw her aboard. Neis tried weakly to catch the edge of the opening, now nearly six inches above his head. I caught him up with a great heave that sent him sprawling inside the craft. Then I leaped upward desperately, for the ship was far above my head. My fingers hooked precariously over the lower edge of the entrance and I hung there, struggling futilely to get up. Winifred caught my wrist and tugged frenziedly—a mighty effort to throw my foot up and catch it inside the port. Done! Another frantic wrench and I was inside. The port crashed shut behind me as Neis fell on the closing lever.

An instant later we were pinned to the deck, powerless to move as the mighty craft groaned under the terrific outward thrust of gasses from the exploding planet, that hurled us upward with rocketing velocity.

I held my breath. Would the heated gas and lava from the interior of Ev melt our ship? Agonized moments crept by.

Fierce white sheets of flame, huge palpitating blobs of molten rock, reached for us vainly. A mighty whitehot boulder, larger than a skyscraper, hurtled up out of the depths, almost grazing us as it shot past. But no sound came to us through the crystal hull. Only our straining eyes brought to our brains the stupendous event that was taking place in the billowing, tortured clouds of dust, steam and molten rock below us.

Neis gave a cry. The pressure was lessening, and he wanted to go up to the control room. I staggered to my feet to help him.

With Winifred assisting me, I brought him to the control board in the navigating room on top of the ship. He seized a small silver wheel and whirled it.

At once the pressure on our feet increased. Outside the ship the tortured layers of dust shot downward past us. Neis was hurling the ship out of the maelstrom of the exploding, disintegrating planet. With startling abruptness we shot out into empty space, where the light of all three suns struck us full.

Neis sagged against the control board, his clenched fists beating an agonized tattoo against it as he slid down to the floor, stricken anew with the horrible agonies of his living death, a torture that drove the teeth into his lower lip until a great drop of blood trickled down his chin, but failed to quench the indomitable fire of his eyes.

Winifred averted her head. I brought him an ornamental drinking bowl filled with water from the big bronze tank at the side of the room. He gulped it down greedily. The attack was passing. Suddenly he pointed out of the window at a tiny cloud of light points far to our right.

"Space ships of the Thaks, carrying the nucleus of the new nation of Ons that will be slaves on the new planet," he said somberly.

"Where is this planet and what is its name?" I asked eagerly.

"Larek is our name for it, and it is many years' journey from Ev. I don't believe it is visible to your earth astronomers even with their most powerful telescopes. Larek is much younger than either Ev or your earth. It is covered with vast fern forests in which live mighty

bellowing monsters that wallow in the mud and lay eggs. It has but one sun, which may be known to your astronomers as a fixed star."

"But we are not following them!" I exlaimed in sudden apprehension.

"It would be of no use," said Neis wearily. "This craft is not provisioned for the journey, nor is the water supply sufficient. At best there are about two months' food and water for the two of you here, and, even if you could in that time overtake the Thak ships, the Thaks would not let you aboard, because they would believe that you are Ons, and of them they have enough. The Thaks might even pause in their flight to destroy you."

I stared back at the monstrous, swirling cloud that was all that remained of Ev.

"But surely there is some other planet nearby."

He shook his head. "None nearer than nine years' flight, and it is frozen, waterless and airless."

This mighty crystal ship was to be our tomb.

I turned to Winifred and read weary resignation in her eyes. We had come through Grant's death and the struggle back to the ship just for this—this lonely death in this great, empty cylinder. Far better that we had died quickly back there with Grant, or had been snuffed out in the explosion of Ev. Unreasoning anger gripped me. I whirled furiously on Neis.

The sight of his dark face graying to a dirty pallor, and the retching of his pitiful body in fresh agonies, halted me. A great pity swept me. After all, he had done what he could, all that anyone could possibly have done. He had helped save Winifred from the brutal Keron, and had at least given to her and myself a place to die in peace together. And all this he had done in spite of the indescribable agonies of approaching death. Ashamed of my anger, I brought him fresh water to drink.

After a time he got unsteadily to his feet and moved weakly back to the rear of the control room, pausing in front of a big metal chest that was built into the wall. Sliding back the bolt that fastened down the lid, he opened the chest and beckoned to us.

We stared into it curiously. There were two huge crystal balls, one in either end that nearly filled the chest. A narrow tube of crystal connected these two balls, and encasing the crystal tube was a great number of tiny electro-magnets, connected by gold wires to a tiny switchboard.

One ball contained a big spool wound full of the finest of metal tape. One end of this tape passed through the crystal tube into the empty ball where it was attached to an empty spool.

Behind the switchboard at the back of the chest was a small lead casket.

Neis slid back a panel in the lead casket, revealing a tiny, black, crystal window through which we could see a fierce, glowing spark of light.

"That is radium, the brain of the ship," he explained.

"Brain?" I repeated in bewilderment.

"To be sure; the control center of the craft," he said patiently. "That tape-filled spool is the record of the

journey this ship made from Ev to earth. The flight back to Ev from earth was accomplished by reversing the motion of the spools and letting the brain handle the ship. And now the steel tape is again reversed for the flight to earth and is winding up on the empty spool, but too slowly to be detected by the naked eye. When the tape is all on that empty spool four hundred years from now, this ship will be in your solar system, or so close to it that no one could miss it."

"How does it work?" asked Winifred.

"Those electro-magnets in the sides of the crystal tube between the two balls set up magnetic fields through which the tape passes. Upon this tape is printed a magnetic record of the original journey. This imprint sets up microscopic variations in the magnetic fields of the electro-magnets, which in turn transmit the variations in the form of impulses to the various electrical controls of the ship through the switchboard. The lump of radium in the lead casket is the special generator of current for this tiny switchboard, the electro-magnets, and the motor that rotates the spools. The current results from the continuous bombardment of radium particles against the raraghon screen with which the casket is lined."

"Current for the whole ship, too?" I exclaimed in amazement.

"No, just for the brain. Current for the ship is generated by large lumps of radium in big lead containers which operate untended for thousands of years."

"You mean, then, that if no one disturbs this ship, it will fly straight back to earth?" I asked excitedly.

"Not quite, but almost. Your solar system does not move exactly in accord with the drift of the three suns of Ev, but so close to it that in the course of a couple of thousand years the variation is less than a billion miles. Or, as space is measured, less than a hairbreath from the exact center of the bull's eye."

Full understanding of the daring plan burst upon me. I was filled with exultant hope. The dangers? They would have seemed overwhelming in other circumstances, but in our desperate plight, they were trivial. But not entirely forgotten.

"How about the suspended animation?" I queried anxiously.

"It will be taken care of by the radium brain far better than human hands, or even Thak intelligence, could manage it. The brain keeps constant the eos vibration which prevents the tiny spark of life from becoming entirely extinct. And at the proper time it will give the order to thaw out your bodies and awaken you to life again. On the original journey my own awakening was recorded on the tape, and this same order will suffice for both of you, since it applies to everything in the compartment. Meteors? They are taken care of by a special warning device which also automatically cuts out the brain control, takes charge of the ship and steers it to safety, then returns it to the course again and gives control back again to the brain. Come, I must teach you how to handle the ship before I become too weak."

A day or so later, earth time, I

had mastered the rudiments of navigation, manipulation and landing. Then Winifred and I went down to the crystal compartment with the pallets. Neis shook hands with us dully. His eyes were glazing and he swayed on his feet. Only by terrific effort of will could he keep moving. He closed the panel on us, but this time we held the secret of opening it from the inside. Filled with uneasy fears that we would not admit to each other, we lay down on our separate pallets . . .

It seemed to be but the next morning when we awoke, as indeed it was for us. The ordeal was excruciating, agonizing. I arose stiffly to find Winifred already up and fairly drinking in the sight of the brilliant sun, our own sun, that shone far ahead of us in space like a flaming arc light still small in the distance. She smiled at me tremulously. Asleep four hundred years? Impossible.

And so it seemed when we opened the compartment panel and stepped out into the passage. But in the control room we found a moldering skeleton against the rear wall. There were a few metal buttons and shreds of clothing. That was all that remained of Neis. He had evidently died while gazing back at the whirling, thinning cloud of his world, which like himself was passing out of existence.

I stared back at the vast curtain of infinite space, trying vainly to place the location of the three suns of Ev when Winifred gave an excited cry.

"Look, look! A space ship!"

Sure enough. The glasses revealed the name on the bow of the long cigar-shaped hull: "*ANDROMEDA*, Port of New York, U. S. A., Earth."

Truly the centuries had slid past, for in 1933 there were no space ships from earth. Contentedly I set a course to follow the *Andromeda*, and then with Winifred, went below to find the store of frozen food we had gathered under the direction of Neis before his death four centuries before.

The End

(Continued from page 5)

ment. Some day the public will wake up to an intense, conscious interest in Scientifiction. Just as in the past in the realms of war, exploration, or mystery, so it will be in science: man will use fiction to express his pride in the deeds he has done, and his dreams of the things he wants to do and has not yet accomplished.

Miles J. Breuer, M.D.
210 Security Mutual Building
Lincoln, Nebraska

MONSTERS of the RAY

A. HYATT VERRILL

Illustrated by FRANK R. PAUL

*FOR years on years, men, interested in ancient ruins, have been hypothesizing and theorizing and formulating new views about prehistoric times, the ancient Egyptians, the Mayas, the Incas and other races, from their findings among the ruins in Peru and Mexico in the Western Hemisphere, Africa and Asia on the Eastern Hemisphere, and wherever else research of that kind has appeared to give results. By a process of building-up, we have learned much about the old Inca and Maya tribes of early America, and about the races that preceded them. Mr. Verrill, being an archeologist of much note, particularly interested in the story of ancient North and South American Indians, is thoroughly conversant with what is known of the legends, so-called myths, and "beliefs" of the Incan and Mayan races, and is therefore well qualified to write scientific fiction based on this subject. If he deviates somewhat from the subject of Indians in "Monsters of the Ray," Mr. Verrill does so only for the enhancement of the interest of his tale. We say unreservedly that this is one of the best stories we have published by this author in many months—which is saying a good deal. **

** This is the original blurb.*

To ninety-nine people out of every hundred the name of Frank Ogden Harris means nothing. Nine hundred and ninety-nine people out of every thousand have never heard of him or, if they have, the name has conveyed no more interest, nothing more of importance than the name of John Smith or William Jones.

To a certain number of people, however, Frank Ogden Harris was well known and his name meant a great deal. Among the more advanced members of the chemical profession he bore a high reputation for a number of noteworthy discoveries in inorganic chemistry. Several of his formulae were in constant use, and metallurgical chemists were all familiar with the Harris system of assaying the rarer earths and minerals.

Among scientists at large, but more especially among those interested primarily in astronomy and physics, Harris had a reputation of being a revolutionary, an iconoclast and something of a visionary. Even the most advanced and open-minded of the younger generation looked upon Harris' theories, prophecies and ideas as somewhat fantastic and impossible. But all admitted that he knew the subjects, that he was logical, that he could bring up points that could not be denied nor argued down, and that, in one or two cases, his theories had been completely borne out.

And in the circles of the most prominent electrical engineers, or rather among those who specialized in electro-magnetic phenomena and ether waves, Harris' name was one to conjure with. The multi-electronic tube was Harris' invention and its royalties brought him a princely income. The chromovisor, by means of which television had been brought within the reach of all, was the direct result of Harris' active and revolutionary brain, and that most important radio accessory of all—the static-nullifier—had been conceived and developed by Frank Ogden Harris.

The medical profession also knew Harris' name and had good reasons for remembering it, for his Z-Xray apparatus had made those twin terrors of mankind—cancer and leprosy—of no more consequence than chicken-pox and whooping-cough. Yet for some unknown reason—it most certainly was not modesty—Harris had never permitted his name to be associated with any of these inventions or discoveries. He was quite willing to blow his own horn, as the saying goes, among men who could understand what he was talking about, and he had no illusions in regard to his own abilities, his own intellect, or his own knowledge of the most abstract and complicated sciences. But he detested publicity and notoriety. To him a newspaper reporter was the epitome of stupidity, vulgarity and impertinence combined, and nothing would arouse his fury so much as some flippant, inaccurate press account of some scientific discovery or attainment. He avoided publicity as the devil avoids holy water, and he carried his detestation of notoriety to such an extent that, fearing lest some reporter might bring his name into the limelight, all his contracts with the manufacturers of his various devices, apparatus and reagents contained a clause to the effect that, if the name Harris was used in any manner as a trade mark, a trade name, or for sales or advertising purposes, the contracts become null and void. He even went further and carried on his experiments in his magnificently equipped laboratories under an assumed name. Only in Peru, where he maintained a private observatory, together with a work-shop, a laboratory, a charming residence and a vast library, among the sublime Andes, was he known as Frank Ogden Harris to the Spanish-American public. And there, as he laughingly admitted, nobody bothered over what a "crazy Gringo" was doing, and nobody cared who he was, as long as he paid his taxes, obeyed the laws,

spent a reasonable amount of money and did not mix in politics.

So, as I said in the beginning, not one man in a thousand ever heard of Frank Ogden Harris, or, having heard the name, remembered it ten minutes later. Yet Harris came very near being the cause of wiping humanity from our planet, and, for a space, he held the fate of all mankind, the future of the earth, in the hollow of his hand.

Although Harris' name had been known to me for years, and although I had met him casually on many occasions when we were both present at scientific meetings and other functions, yet I never became really acquainted with him until I met him aboard ship. I was on the *Ebro* of the Pacific Steam Navigation Company, bound for an archeological expedition to Peru, and to my delight found that Harris was a fellow-passenger.

Naturally we became friendly; we exchanged views on the country, narrated experiences and discussed the past, present and future of Peru. Harris expressed the greatest interest in the ancient Incan and pre-Incan civilizations—although admitting he was woefully ignorant on the subject—and plied me with questions. He was a keen observer; he had a marvelously clear mind, and to my surprise I found that many of his deductions, based on his superficial observations, were remarkably close to the conclusions reached by the most eminent archeologists. Being an astronomer—although he had perfected himself in that science merely as a side issue and to aid him in other lines of research—Harris was deeply interested in the astronomical attainments of the ancient American races.

He had gone into that phase of the subject pretty deeply, and really knew more of the technical and scientific details of the Mayas', Nahuas', Incas' and pre-Incas' astronomical instruments and calculations than myself. Also he was absolutely fascinated with the mystery of the accomplishment of the ancient Peruvians' engineering feats, particularly their marvelous stone-cutting, and he informed me that there were some very remarkable ruins near his place. In the end he gave me a pressing and wholehearted invitation to visit him for as long as I wished and to study the remains in his vicinity.

As I had never heard of any important ruins near Tucin, I very gladly availed myself of his invitation, and a few weeks after my arrival in Lima I set out for Harris' place. It was by no means an easy journey. Tucin itself was a tiny Indian village far from the beaten track of railway trains, motor roads and well-traveled highways and, being in an extremely rough and mountainous section, it could not be reached by airplane.

But even when I reached Tucin, nestling beside the brawling river in a verdant, rich-cultivated valley in the heart of the Andes, the worst of my journey lay ahead. At least, so I thought, when after three days of travel over deserts, *punas* (desolate regions) and mountains by motor-bus, horseback and muleback, I reached Tucin and asked the route

to Huaro-Yana, as Harris' place was called. Imagine my astonishment when an Indian, in conventional clothes, pushed his way through the throng of poncho-clad sandal-shod, coca-chewing, stolid-faced natives, who were all chattering in their Quichua tongue, and smilingly announced in excellent Spanish that the Señor's car awaited me! I could scarely believe my ears, for a motor car, in this remote out-of-the-way section of the Andes, seemed as impossible and incredible as a skyscraper in a desert. And when I had been guided to where the "car" was parked, I could scarcely believe my eyes. I had expected to find a rattletrap Ford or a battered "camion"; instead I saw a low-hung, speedy-looking roadster in shiny maroon paint and flashing nickel. As far as appearances went, it might just have left a Detroit factory, except that its tires were of enormous size and of a peculiar light-green color.

I stepped into the car and settled myself back on the luxurious cushions, my saddle bags and burro-pack were stowed away in a rear compartment, the Indian servant took his place at the wheel, and the next moment, amid the shouts of the villagers, the barking and yelping of scores of mongrel curs, the shrill cries of scurrying children, and the stampede of a train of supercilious-looking llamas, we rolled along the narrow cobbled streets between the thatched stone huts and left the village of Tucin behind. Before us stretched a steeply inclined, rocky plain or *puna* merging into the colossal mountains, their bare sides scarred and seamed as though hewn from a solid mass by some titanic axe, their topmost summits gleaming white with perpetual snow against the clear blue sky. Across the rough *puna* a well-marked road had been made by removing the rocks and piling them in low walls on either side, and the car sped swiftly and smoothly onward towards the mountains.

Presently we reached a deep *arroyo* (brook) with precipitous sides, and with a frail-looking suspension bridge spanning the torrent fully two hundred feet below. The structure, evidently ancient and probably dating from Incan days, was composed of llama-hair ropes with a flooring of narrow strips of wood, and my heart seemed literally in my mouth as the chauffeur unhesitatingly swung his car down the slight grade of the approach. To have ridden over that sagging, swaying bridge on muleback would have been a nerve-trying feat, and that an automobile could cross without mishap appeared incredible. However, the Indian assured me it was perfectly safe. He reminded me he had driven over it only a few hours before, and with a mental prayer I resigned myself to fate. It seemed ages before we reached the farther end of that bucking, lurching, creaking structure, though it could not have been more than a couple of minutes, and in shaken tones I asked the Indian if there were others to be crossed. He shook his head, grinned, and commenced the steep upward climb of the mountains, I gazed ahead in amazement. Zigzagging up the almost perpendicular mountain side was a smooth, perfectly graded road, narrow to be sure, so narrow that

there was barely a foot of space between the wheels of the car and the edge of the roadway. But, aside from the dizzy gulf that stretched beneath and the even more dizzy wall that rose above us, it was safe as a city boulevard. In places the mountain side had been built up with great walls of massive stones to support the roadway; in other places *barrancas* or ravines had been filled with masonry to form causeways, and at each sharp abrupt turn a retaining and guard wall of stones had been built.

It was the most amazing thing I had yet seen in this wild, uninhabited district, more astonishing even than the car, and I marveled at Harris—for I could think of no one else—having gone to the tremendous expense and the herculean labor of building it solely for the use of his car on his occasional visits to Tucin and the outside world. Not until we rounded a turn some eight thousand feet above the *puna* did the truth dawn upon me. Here was a small plateau overgrown with giant cacti, immense bromeliads and thickets of the wild purple heliotrope trees. But I scarcely saw these details. I was gazing at the ruined stone buildings in the center of the plateau, ruins whose exquisitely fitted blocks with the round "Pucara" tower rising above them were unmistakably Incan. Instantly at sight of these ruined buildings I recognized them as the remains of a "tambu" or rest-house and a signal-tower. Everything was explained. The highway over which we were traveling had not been built by Harris, but by the Incan engineers centuries before the first white man set foot in America. It was a section of that most marvelous of ancient highways—the great Incan Road—that, before the conquest, had stretched for over four thousand miles from Ecuador to Chile!

So filled with wonder, so intensely interested did I become when the truth dawned upon me, that I scarcely noticed the character of the country, the strange form of Andean vegetation, the terrific gorges and vast heights as we climbed steadily upwards. All my attention was fixed upon the road and the engineering feats that had been necessary to build it. In many spots it was hewn from the solid rock; in one place it passed through a tunnel over one hundred feet in length and, not until the Indian brought the car to a halt, did I realize that we had surmounted the crest of the Andean range and that within a few hundred yards was the foot of a magnificent, gleaming glacier.

The Indian half-turned in his seat. "Huaro-Yana," he announced, pointing ahead. I craned my neck and stared in the direction he indicated. Far below us, seemingly so directly beneath that a stone might have been dropped for three thousand feet upon it, was a tiny square of vivid green cut by the white thread of a river. Scattered about its edges were the red-tiled roofs of buildings, like poppies in a green field. At its foot a precipice dropped, a sheer perpendicular wall for a thousand feet or more, to vanish in a hazy purple abyss, while behind it, and framing the charming picture as a proscenium arch frames a back-drop—was a natural arch of coal-black basalt—the *Huaro-Yana* or Black Bridge

which had given Harris' place its Quichua name.

Only for a moment could I gaze upon the scene that, dwarfed by distance, and so amazingly at variance with its surroundings of awe-inspiring, bare mountain heights, seemed like a painting rather than reality. The next instant we were speeding down grade, traveling at a pace that caused me to hold my breath and to grip the sides of the car convulsively, swinging around horse-shoe curves and hair-pin bends on two wheels, roaring across masonry culverts, and dashing along the verges of precipices, where I gazed directly down through half a mile of air.

In vain I gasped orders to the Indian to slow down, he merely grinned and, like an imp from the pit, seemed to speed the faster. Each second I expected to find myself and the car hurtling into space. And then; suddenly, before us loomed that stupendous arch of black stone. With a roar we raced beneath it and the next moment came to a stop before a low stone bungalow embowered amid blossoming vines and blooming shrubs.

Harris rose from his chair on the shady porch and stepped forward with a cheery greeting and, still unnerved, but thanking God I was yet alive, I clambered stiffly from the roadster.

Chapter II
A Laboratory in Huaro-Yana

"Welcome to Huaro-Yana!" cried Harris, gripping my hand. "Did you enjoy the trip?"

I sank into the nearest chair. "Do you enjoy dreaming you are falling to certain death and then bringing up with a start in your bed?" I exclaimed. "Well— that's the way I feel about this trip—I have never enjoyed anything more than coming to the end of it."

Harris chuckled as he poured me a drink from a frosted shaker. "You'd become accustomed to it in time," he assured me, "Cusi *is* inclined to speed a bit in the home run—likes to come in with a flourish. But it's safe enough—the car couldn't leave the road if it tried. But what do you think of my place here—of Huaro-Yana?"

"It's the most fascinating spot I've ever seen—viewed from up there," I told him, gesturing towards the zenith, "and from what I have seen of it, it's just as beautiful from here. And that natural arch—that black bridge—beats anything in Zion Park or the Grand Cañon. You've a wonderful place here, Harris, but the devil of a place to reach—quite out of the world." He smiled. "That's why I chose it," he observed, lighting his pipe. "But you've made a mistake. That arch is *not* natural —it was made by human hands."

I sat up with a jerk. "What!" I ejaculated. "Impossible! Why, it's fully one hundred feet high, twice as wide and fifty feet through. "No——"

"Nevertheless it *was* cut by men," he insisted. "Didn't I tell you there were some interesting remains here? But I'm not surprised that you doubt it—I did myself at first. However, you'll see for yourself presently. By the way, what did you think of the car?"

"That it was an optical illusion, at first," I laughed. "How on earth did you get it here? And what sort of tires do you use?"

"It wasn't so hard getting it here," Harris assured me. "These Indians can carry a load of two hundred pounds for day after day. And a bunch of them together will lug more than a ton, when slung upon poles. I brought the car in sections and reassembled it here—I've a fairly well-equipped machine shop, you know. Oh, and about the tires, they're a sort of an experiment; made of a chemical composition I invented—something like elastic Bakelite, and solid—no chance of blowouts or punctures."

"Good heavens!" I cried, "why don't you put them on the market then? There'd be a fortune in them. They rode like regular balloons."

He smiled. "Maybe I will—some day," he said. "But I don't need money and I've a lot of more important things to attend to."

I gulped down the contents of my second glass and stared at him. "If half of what you say is true, you're a magician dwelling in fairyland," I told him. "I——"

Again he interrupted me. "Piffle!" he exclaimed, waving his hand as if dismissing the astounding matter as of no consequence. "Anyone could do such things. However, before you leave, I hope to show you something really big. Do you know——" after a moment's thought, "I'm afraid I wasn't entirely unselfish in asking you up here. I—well, to tell the truth I wanted some intelligent scientific man to be here when I tried out what I hope will be my greatest discovery. And I didn't want a fellow in my own line. Besides—" with a grin —"I took a liking to you from the first; you've got so many theories and ideas about as wild as my own. And finally, well, if my ideas work out, you'll be well rewarded; you may solve all the mysteries of the pre-Incas."

Amazing, incredible as were the feats he mentioned so casually on the day of my arrival, they were nothing in comparison with those I witnessed later.

For the first few days I was busy going over the place with Harris, and a marvelous place I found it. How he alone, with no aid other than his Indian servants, had ever accomplished such wonders was absolutely astounding. His house, a bungalow-like structure, which to my intense delight I found to be an ancient pre-Incan building repaired and adapted to modern life, was as well furnished and as well equipped with every convenience and luxury as any home in a great city. In fact, it was far better equipped, for Harris had installed many of his own inventions that were still unknown to the world. Such was his lighting system, produced by some intricate means and transmitted by some form of radio, and the lights themselves were masses of some composition that emitted an intense incandescent glow. But there were other ordinary, everyday comforts—hot and cold water, modern baths, and in the big comfortable living room a grand piano. Knowing that Harris was no musician and cared nothing for music, I was vastly surprised at finding such an instrument in his

remote Andean home, especially as it must have been a tremendous undertaking to transport it over the mountains. But when I asked him about it, he laughed and opened the instrument. To my amazement I discovered that instead of a piano it was a most astonishing radio receiver that bore about the same relationship to the best and most perfect set on the market that a grand piano bears to a music box.

"It keeps me in touch with the world's news," he explained. "I can get practically every station on the face of the earth. You'll have a chance to hear what's going on tonight."

But it was the laboratory, the work-shop and the observatory that aroused my greatest interest and in which Harris took the most—and well warranted—pride. He must have spent a fortune on them and their equipment, and I felt myself wondering more and more how he ever had brought the stuff in. But, as he said, the mountain Indains are marvelous porters and from Tucin the heavy stuff could be brought by Harris' motor truck—that is after he had really got started. Being neither a chemist, an electrical expert nor an astronomer, I could not of course grasp what all the devices and apparatus were for. But I could appreciate the mechanical equipment of his machine-shops, the lathes, milling-machines, presses, shapers and dozens of other machines. And I could understand and appreciate the farm, the dairy, the gardens, and the perfection of Harris' sanitary and economic arrangements. Much to my surprise I discovered that he used water power for practically everything, for somehow—with his seemingly almost magical feats in evidence—I had expected to find some new and amazing source of energy.

Harris' help, as I have said, consisted wholly of Indians. Not the dull, stupid-looking Quichuas I had become accustomed to throughout Peru, but tall, finely built, intelligent-looking chaps that somehow reminded me of the Navajos of our southwest. I asked Harris about them, for they were wholly new to me and I thought I knew all that was to be known of the South American aborigines.

He chuckled. "That's the greatest compliment you ever paid me," he declared. "Imagine you—one of the most eminent; if not *the* most eminent of ethnologists, asking me about Indians! Why, old man, it's as if I asked you to explain the formulae for determining the vibratory speed of the Eltham ray!

"And the worst of it is—" he pretended to sigh—"I can't answer your question any more than you could answer that imaginary query of mine. All I know is that they were living here when I found the place—no, not just here either, for they had a holy fear of the Huaro-Yana, but over to the south a bit. Their village is still there and a few of the older men and women still live there. But after I hired some, and the others found the white man's magic had driven away the devils of the place, the rest flocked over here. I don't know how many there are. I only know how many I pay—the rest are inquilines, self-invited guests, as

you might say. I do know they're superior to the other tribes and they have a lingo of their own. You can while away some of your time making an ethnological study of them."

Naturally, I devoted considerable time to a study of the Indians and found them a most interesting lot, at the same time adding not a little —I flatter myself—to our ethnological knowledge of South America.

To make a long story short, I became convinced that the natives were not of the Quichua race, but were remnants of the far more ancient pre-Incas, in all probability the light-skinned people from whom the reigning Incas came, for they spoke the ancient Hualla language, from which the later Quichua was derived, and they alone, of all Peruvian Indians I had found, still retained legends and folklore regarding the pre-Incan works. And unlike the other natives of Peru they wore—or at least those who had not adopted European garments and had taken to Harris' old clothes, wore, the costumes of the Incan races; short drawers or trousers, loose sleeveless smocks, moccasin-like slippers and the "llantu" about the head. But most interesting of all that I learned from them, and that which had the greatest bearing on subsequent events, was the fact that in their legends or myths they had a story to explain the means by which the pre-Incas had cut the gigantic stones of which their prehistoric walls and buildings were constructed. According to this tale —which of course I put down to folklore and fable—there had once been a very great king, who was also a god, who could call upon the stars and the Sun-God for help. And this man called down giants from the skies and the Sun-God sent his fire and with this fire from the Sun-God the great king cut the rocks and the sky-giants lifted them into place.

But in the end, so the legend stated, other giants or devils followed the good giants and slew them and destroyed the works of the great king, and though the king, in a great battle with the devils, killed them with the fire sent by the Sun-God, yet in the doing of it he was wounded and died, and with him died the knowledge of calling the sun and the stars and the sky-giants to cut the rocks and build the mighty walls.

I told Harris of this and remarked that it was a rather good myth and, ethnologically, entirely new.

For a space he was silent, puffing as always at his pipe and evidently thinking deeply. "Hmm," he muttered at last. "I thought you were an imaginative fellow and not bound about with old-fashioned ideas. I thought you were almost as revolutionary in your theories as myself, but I'm afraid you're not unlike the rest. You call that a myth, folk-lore. How do you know it's not true?"

I looked at him in amazement. Then I broke into laughter. "True!" I cried. "Of course it's all bosh! I'm as willing as yourself to admit the possibility of almost any theory, as long as it's reasonable and not contrary to the laws of nature, but I draw the line at the supernatural. Sun-Gods, sky giants, devils—tommy rot!"

"Sometimes," he observed judicially, "things that *seem* supernatu-

ral are actually natural and *vice versa*. And we're learning new things, new facts about the 'laws of nature,' as you call them. Bosh, tommy-rot, you say. Wouldn't your father—or mine—have said the same thing if they'd been told we could sit here and listen to someone speaking in London or New York—or even if they'd heard stories of my car? Mind you, I'm not saying these Indians' legends *are* true—I don't believe they are literally so—but I don't feel so sure that they're not merely exaggerations —more or less poetical versions of actual historical occurrences. Didn't you tell me that you'd never heard an Indian legend that wasn't based on facts?"

I nodded. "Yes, and I'm willing to admit that much in this case," I told him. "We know the pre-Incan stone work is here. We know someone cut and placed the stones. I haven't any doubt it was done by the orders of some powerful ruler. No doubt, to his subjects, his superior intelligence and knowledge appeared like magic. And I haven't any doubt but that he and his people were destroyed by some savage enemies. As for the rest —fairy tales!"

Harris smiled. "In that case, old man, won't you tell me *how* the pre-Incans *did* cut their stones?"

"I wish I could," I replied, "but I admit neither I nor anyone else knows. However, we'll find how simple is the explanation and we'll kick ourselves for not having thought of it before."

"Think so?" he riased his eyebrows and looked at me with a strange half-amused, half-quizzical expression. "Well, I don't. However, we may find the answer much sooner than you expect. Remember what I said when I asked you up here—and hinted that you might learn the answers to some of the puzzles?

"Well—one of the puzzles I hope to solve is this very mystery of the pre-Incan stone work, though that's merely incidental—that will fade into insignificance beside other mysteries I hope to solve before long."

"If you keep on talking like that I'll begin to think you've made some contact with the stars and the Sun-God," I told him with a laugh. "But," I added, "all joking aside, if you can answer the riddle of the stones, you'll confer a tremendous benefit on science and archeology. I don't suppose you'd be willing to give me any more definite idea of your plans or theories?"

He shook his head, refilled his pipe and rose. "Sorry, I can't—not just yet," he said. "Before long perhaps. In the meantime, there are the ruins to occupy your mind and the Huaro-Yana—cut by the 'giants of the sky'!" He grinned mischievously as he left me.

Chapter III
A Mysterious Discovery

If Harris had been an archeologist, whose sole aim in life was the solving of the mysteries of Peru's prehistoric civilizations, he could not have selected a better site for his investigations. He had hinted—quite casually—that there were some interesting ruins on his place. Then he had astounded me with his bald statement that the Huaro-Yana, the great basaltic arch, had been

artificially formed. I had noticed that his house and most of his buildings were pre-Incan structures restored and repaired. But all this had not prepared me for the astonishing ruins and remains I found on every hand. I had visited every known pre-Incan site in Peru and Bolivia—Tiahuanaco, Cuzco, Viracocha, Pisac, Ollantay, Macchu-Picchu, Chavin and scores of less known ruins, but all together would not have equaled the stupendous remains that I found at Huaro-Yana.

The entire valley—I say valley, yet Huaro-Yana was not a valley but an upjutting spur of land—(a sort of mesa)—rising for a least a thousand feet above the bottom of the real valley between the ranges—with an area of perhaps two hundred and fifty acres, was, or rather once had been, completely covered with the gigantic structures of a prehistoric civilization. So numerous, so immense were the ruins, that it was days before I even obtained a general idea of their plan and arrangement.

And the more I studied them, the more amazed I became. Not only did I find that Harris had been correct when he had stated that the Huaro-Yana itself had been hewn from the living rock, but I discovered that the neck or ridge of rock that connected flat-topped mesa with the neighboring mountain side, and across which I had come in Harris' car, was actually a stupendous piece of masonry. More than this I found that the bed of the river that led across the ridge and flowed through Harris' fields, to fall in a magnificent cataract into the gulf below, was a channel constructed by man, and that the stream itself had been deflected from its natural course down the mountain side and had been led across the mesa. And the only approach to the place was through the stupendous arch of the Huaro-Yana. It was in fact an absolutely impregnable spot, or would have been in the day antedating gunpowder and heavy artillery. A mere handful of men could have held the approach and the arch against thousands, and when, after risking life and limb a dozen times, I managed to reach the summit of the arch, I found—as I had half expected to find—that it had been planned as a fortress. There were the remains of buildings, of walls, of parapets, and there still remained great piles of stones ready to be hurled down upon an enemy attempting to pass under the archway.

Evidently the place had been a stronghold, a city and a religious centre combined, for there was an enormous temple topping an artificial mound; there were ruins of magnificent palaces, there were hundreds of low walls marking the homes of the inhabitants, and in one spot I came upon the finest specimen of an Inti-Huatana that I or any other archeologist had ever seen. Not only was this gigantic stone sundial in perfect condition, but the disk—to my unbounded delight and astonishment—was sculptured and bore marks and unquestionable inscriptions—the first evidences of a written or recorded language ever discovered in Peru.

But this story is not a dissertation on ancient Peruvian cultures nor an account of my archeological studies

and discoveries at Huaro-Yana. All that will be found in my, "The Cultural, Religious and Astronomical Centre of the Pre-Incan Civilization in Peru. Proceedings of the Museum of American Archeology," and I must apologize to my readers for having, quite unconsciously, been momentarily side-tracked.

But to resume. I had expected to stay a week or two at Harris' place, but with so much to occupy my time, so much to interest me at every turn, the days sped by with miraculous swiftness and a month had gone almost before I realized it. Of course, to dream of making a thorough study of the ruins in the time at my disposal was quite hopeless. There was more than enough work to occupy members of a large expedition for several years, and the most I could hope to do, was to make a general survey, record the most interesting features, make measurements, and possibly carry on some excavatory work. Hitherto, very little material of value—such as human remains and perishable objects—had ever been found in the pre-Incan Andean sites. But Huaro-Yana was in such an excellent state of preservation that I had high hopes. And I was not disappointed. I located several stone tombs, and from these obtained some most remarkable mummies completely clad in magnificent robes, together with a number of specimens of unique pottery, various bronze, silver and a few gold objects, wooden utensils and weapons, beads, ornaments, etc. I was, of course, elated at my success, and Harris was as enthusiastic as myself.

Many, in fact, most of the objects were easily identified, but among them was one vessel that puzzled me. It was a globular vessel with a long neck—something like a carafe in form—and with two smaller openings, both closely stopped with plugs, one on each side of the neck where it joined the body. It was formed of what I took to be gold at first, but the instant Harris examined it he declared it was not of that metal.

"Then what is it?" I demanded. "Obviously it's not bronze, copper or silver. Neither is it iron, lead, tin or brass. What *is* the metal?"

He shook his head as he examined it with a lens, hefted it and scratched it with his pocket knife. "I don't know," he admitted. "Off-hand, I should say it's some composition —if modern I'd say aluminum-bronze. But of course, that's impossible. If you'll let me, I'll analyze it."

"I'd be glad to let you," I assured him. "I'm as curious to know what the material is, as I am to solve the puzzle of its use. Can you offer any suggestion?"

He laughed. "It looks more like an old-fashioned bomb or hand-grenade than anything else," he replied. "But as that's out of the question, we'll have to think up something else. Now let's see. It has three orifices, of which two are closed. Why should it have these two stoppered holes, when the main opening would serve to empty or to fill it? I think you'll find the answer to that question in the inside of the pot. Personally I believe it's a triple affair—that it had three separate compartments and that the two stoppered holes lead to

two of these and the neck opens into another. Admitting that for the sake of argument, why is one opening left open and the others closed? Answer: the two contained something that was to remain within them while the third contained material that was to be poured out or used."

I clapped my hands. "Bravo!" I cried. "Go to the head of the class, Harris. But what the deuce could the pre-Incans have had in the secret compartments? Answer me that, old man!"

Harris grinned good naturedly. "May have been a prehistoric thermos bottle!" he laughed. "Or," he added. "one of those gadgets for holding three kinds of liquor—no, that wouldn't do—it would have had three spouts in that case."

"Why don't you suggest it was some sort of a box of tricks belonging to that fabulous old king who was also a great magician?" I asked him banteringly. "Or maybe he kept a couple of genii—two of the sky-god-giants—locked up in the thing!"

"Hmm," observed Harris, who was shaking the pot and listening intently. "There's something inside. Genii don't don't rattle, do they?"

"Then let's pull out those plugs and dump it out," I suggested.

"I don't know about that," said Harris, and I stared incredulously at the expression on his face and was amazed at the seriousness of his tones.

"We don't know what might be in it," he continued, staring fixedly at the metal vessel as if trying to penetrate its sides and see what was within. "Somehow I don't approve of taking chances with these old things. You may laugh at me, but don't forget Doctor Ledell—remember how he opened a sealed jar at Ur and dropped dead instantly? And there was Barstow in Yucatan—you told me about him yourself—how he went raving mad after smelling the contents of an innocent-looking stone box. How do we know this thing doesn't contain some damnable poison that'll knock one or both of us out, if we get a whiff of it?"

"Maybe you're right," I admitted, as his words brought vivid memories of Ledell and Barstow. "Perhaps we'd better leave it as it is."

"We can do that and still find out what's in it," declared Harris. "I've got an X-ray machine, a fluoroscope and several more modern devices of the same character at the laboratory. When we go back to the house, we'll see what we shall see."

Perhaps Harris was more interested than I in the strange metal carafe and its contents, or perhaps my greater interest in the other specimens caused me temporarily to forget the thing. At all events, I gave it no further thought, and during the rest of the day and evening I was busy preparing, studying and labelling my specimens. Not until the next day at breakfast was it mentioned. Then, with a peculiar glance at me, Harris asked: "Remember that metal vessel you found yesterday?"

I nodded. "Been doing anything with it?" I inquired.

"More than you'd guess," he replied. "I've been working on it most of the time since we got back here yesterday."

"Well, what did you find?" I asked,

helping myself to a luscious grafted mango. "A genie or ice?"

Harris did not smile at my flippancy. "In the first place," he informed me, "I analyzed the metal. It's not what I thought it was—in fact, it's an entirely new and unknown metal. It——"

"What?" I exclaimed suddenly, all attention. "You mean to say it's not an alloy as you thought?"

He shook his head. "I flatter myself I'm as good a chemist and as expert a metallurgist as any living man," he said. "And I'll pledge my reputation that the thing is composed of some metal at present unknown to us. But that's not all. It contains, as I assumed, two lots of material in two separate compartments. But the third compartment is empty."

"Well, what *are* the materials?" I asked him. "Poisons?"

"That I cannot definitely say—as yet," he replied. "But" he added, after a moment's thought, "I'm not sure that your discovery has not paved the way to solving the problem I've been working at and worrying over for the past three years. If I'm not mistaken—and my spectroscope and other tests convince me I'm not—the contents of that flask hold the secret I've been trying to solve. Would you object very much if I should ruin the specimen?"

"It's a darned valuable thing," I reminded him. "But—Oh, the devil; see here, old man. I'm not curious, I'm not asking what you're after. I know it must be something big and if that old brass bottle, or whatever it is, will help you, go to it and rip it apart, melt it down or do anything you please with it. It was on your property anyway and you're welcome to it."

"Thanks!" he cried with more than mere thanks in his tone. "I'll try not to spoil the thing. And—well, I don't like telling my plans until I'm morally certain I can carry them through. But what I have in mind *is* rather 'big' as you put it, and if it works out you'll learn how the old pre-Incans cut their stone and—perhaps—a lot more."

Chapter IV
How the Pre-Incans Cut Stone

I had been with Harris six weeks when we found the metal vessel and it was not until ten days later that he again referred to it. Often, during that time, I had wondered what he was doing—for he was buried in his laboratory from morning until night nearly every day—but I understood him well enough by this time to know there was no use in asking him questions. When he was ready to announce anything of interest he would do so.

Then one day, without the slightest reason—for the conversation had been totally different matters—he asked abruptly: "Remember that old legend you told me?"

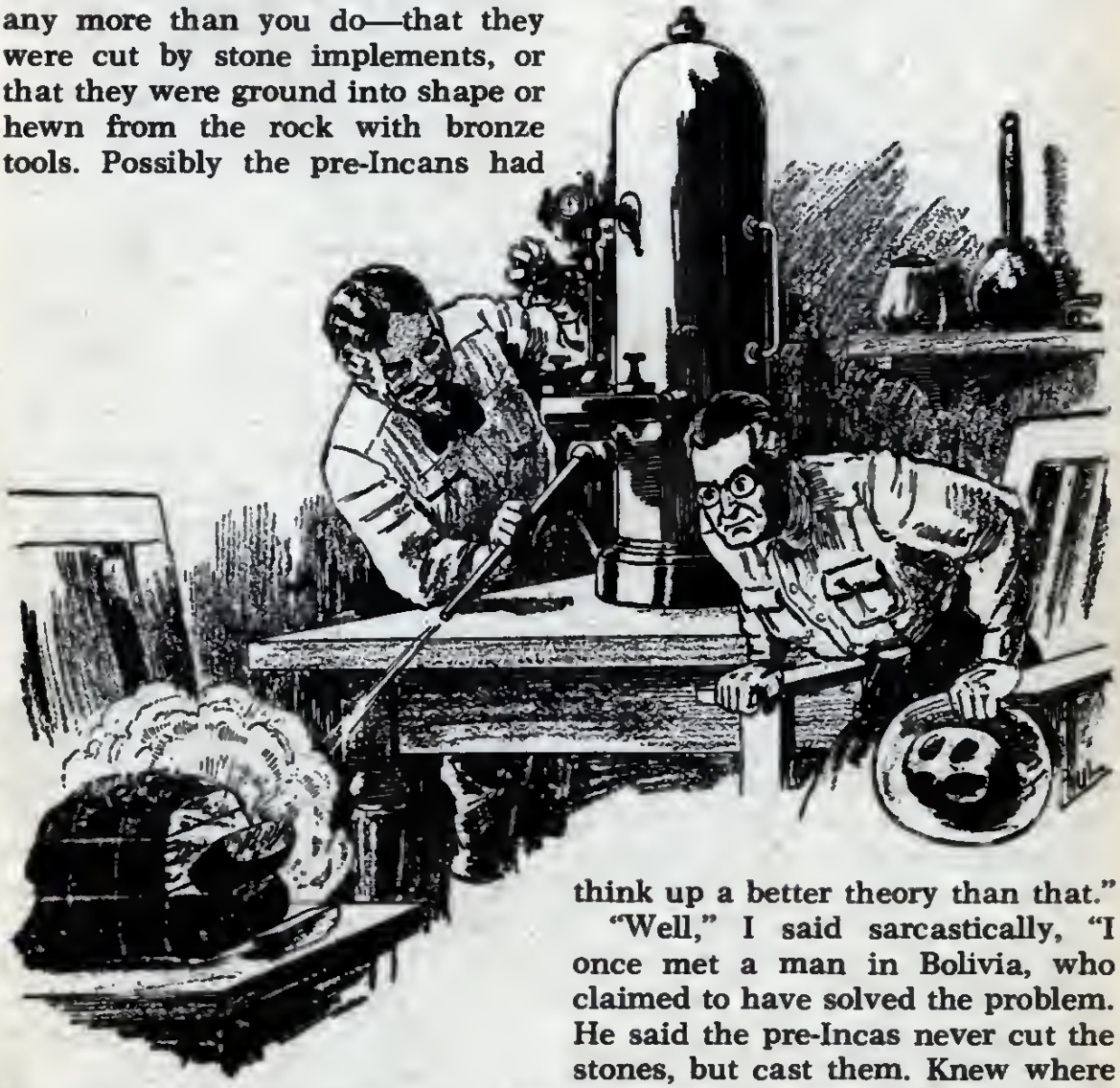
I nodded. "What about it?" I retorted. "Heard another one?"

"No-o" he drawled as if measuring his words. "But I'm inclined to think there was a lot more truth than fiction in it."

I laughed. "Still thinking of that myth, eh!" I exclaimed. "Well, what's on your mind now?"

"Have you ever really given much thought to how those stones were cut?" he asked, ignoring my question. "I mean," he hastened to explain, "have you set down all possible theories and then checked off the fors and againsts each? Have you tackled it in a really scientific manner?"

"Why—er—yes and no," I told him. "Of course, I don't believe—any more than you do—that they were cut by stone implements, or that they were ground into shape or hewn from the rock with bronze tools. Possibly the pre-Incans had



iron or steel—I've advanced that theory, as have others."

"In that case where's the steel?" he asked. "And even if you say—as you will—that it's disappeared, has been lost by corrosion through thousands of years—how long would it take men to cut such gigantic stones in such numbers as are used in any one of the thousands of walls and buildings in Peru? And how long would it take a horde of men to cut that archway, even with steel tools, by hand? With modern machine-drills it would be a tremendous undertaking—requiring years of steady work. No, my friend, you'll have to think up a better theory than that."

"Well," I said sarcastically, "I once met a man in Bolivia, who claimed to have solved the problem. He said the pre-Incas never cut the stones, but cast them. Knew where there was molten rock and ran it into moulds."

"Well, I've had a theory in my head for a long time," he said, "not precisely what you think, however, and your legend of the old king and how he called on the Sun-God and

used the latter's fire rather bore my theory out. If you can burn wood, can even melt metal by concentrating the rays of the sun through a lens, isn't it possible that some device might be made that would concentrate the sun's heat sufficiently to melt or cut rock?"

"I don't say such a thing might *not* be done by scientists today," I admitted rather reluctantly. "But not by the prehistoric races of America. And even if accomplished by modern methods and sciences it would necessarily be on a small scale—merely an interesting laboratory experiment."

"I suppose you are right," he sighed, rising. "But if you're not too busy I'd like to have you come over to the laboratory. I've been working on that metal flask you dug up, and I think you'll be interested in the results."

Of course I became interested at once and accompanied him to the work-shops, where he unlocked a stout door and led the way into a small room adjoining the laboratory. I had expected to see the flask—probably cut in two or taken apart—together with its contents, but as I glanced about I failed to see the thing anywhere. The room contained a couple of chairs, a low stand on which was a brass cylinder equipped with valves and a sort of miniature hose nozzle, and a strong wooden trestle on which rested a good sized chunk of rough, irregular granite.

"Have a seat and make yourself comfortable," Harris invited, indicating a chair as he stepped to the brass cylinder.

I seated myself and watched him curiously as he adjusted the valves and moved the nozzle, which I now saw was attached by means of a universal joint that permitted it to swing in any direction. What he was up to, I could not guess, but I knew he must have some interesting demonstration to show me, and I knew him too well to ask for explanations. For the life of me I couldn't see what the cylindrical tank—which looked more like a fire-extinguisher than anything else—had to do with the metal vessel I had found.

Quickly turning the valves, Harris grasped the nozzle and commenced moving it slowly from left to right. Nothing came from it—not even a sound—and wondering when the show was to begin I glanced at the mass of granite a few feet from where Harris stood.

A sharp ejaculation came from my lips, I leaned forward, clutched the arms of the chair, my amazed eyes fixed upon the stone. Was I dreaming? Had Harris hypotized me? I could not credit my own eyes, could not believe I was in my right senses!

A thin greenish vapor was rising from the surface of the rock, and below it, moving slowly across the rough granite, was a narrow groove as sharp and clear and straight as though an invisible saw was cutting through the solid stone! Unable to utter a sound, my incredulous eyes glued upon the phenomenon before me, I watched the deep scarf move across the rock until it had traversed the entire length of the mass of granite.

What did it mean? How was it done? Before I could frame a ques-

tion, before I could collect my senses, I saw Harris swing the nozzle and begin moving it in a perpendicular line. Instantly my eyes turned to the rock, and now I saw a second scarf cutting slowly from the top of the stone at right angles to the first. A moment more and the two grooves met and Harris' voice roused me from the semi-trance in which I had been held spellbound.

"And the king summoned the Sun-God and the giants of the sky to cut the stones!" he quoted with a laugh. "See here!"

As he spoke he stepped forward, grasped the upper portion of the granite, and lifted a section of it from the rest! I actually gasped. The rock had been completely severed, as smoothly as though it had been sawed from a block of wood!

"There's the answer to your mystery!" cried Harris triumphantly, as he dropped the piece of stone back into place. "Easy enough when you know how—like everything else! Just have a look and see if you can find any traces of 'fused stone' along those cuts."

"But what—how——?" I stammered, as I bent close and examined the marvel.

"By the same—or at least a very similar method to that used by the pre-Incas," he stated. "I've had a theory, a suspicion, for three years, and have been working and experimenting on that line. But it wasn't until you came upon that metal flask—by the way I've learned the secret of the metal alloy—that I obtained any really worth-while results. That flask, my friend, was one of the gadgets the old fellows used. I don't imagine there were many of them knocking about, and this one still contained the materials that were essential to success and that had baffled me. I ——"

"But I don't understand it—yet." I broke in. "How was it done? What has that cylinder to do with it?"

"Everything," he replied. "That tank is merely an enlarged version of your flask. The nozzle represents the neck of the old jar and the valves are modern conveniences to control the operation. I expect the old Peruvians used up the contents of their flasks each time and had to make new ones.

"As to how it was done," he continued, "you saw for yourself. All that is necessary is to turn on the jet, move it along the surface of the stone and the trick's done. See here!"

As he spoke he again grasped the nozzle, adjusted the valves, and before my still incredulous and amazed eyes he cut the granite into various forms. He might have been using a jig-saw on a piece of pine, as far as results were concerned. Even then I could not force myself to believe I was not suffering from some hallucination. I felt as if at any moment I would wake up and find it all a wild dream.

But Harris was again speaking as he lifted and examined the circular, elliptical, octagonal and other shaped blocks he had cut out with his mysterious apparatus. "You see," he said, as he ran an exploring finger along a surface of the cut stone, "it's a good deal like the acetylene torch in its results. It——"

"But," I objected, "there's no flame, no jet, no glow, not even a

sound from the nozzle. How the devil can the thing cut this stone without showing any trace of a jet or flame?"

"I was coming to that," he said, "but you keep interrupting me before I can finish. Not that I blame you"—he hastened to add, "for I can well understand your feelings, your excitement and your incredulity. I felt that same way myself when I first saw the thing work. But about the flame or jet. There is nothing of that sort, for this apparatus differs radically from the acetylene torch. The only resemblance is in the results obtained. But even in that there is a great difference. This doesn't melt or fuse the stone—you very cleverly brought up that argument against the melting theory yourself. No, it causes a disintegration, a chemical or rather, I think, an electronic alteration in the rock. That greenish vapor is, I think, the fumes of various constituents—perhaps mainly pyroxene—being thrown off as new atomic combinations are formed. Perhaps I might compare it to the vapors or fumes that are produced when you treat a mineral with an acid. But ——"

"Yes, yes!" I again interrupted impatiently. "But how, man? How? You say it's not heat, not a flame. Do you mean it's some chemical action?"

He shook his head. "You're hopelessly impatient," he declared. "No it's not chemical. For that matter I can place a piece of wood, my hand —for all I know my whole body— between the nozzle and the stone without affecting the results or the organic matter. If you don't believe that, just watch me."

Before I could expostulate, he had again turned on the valves, and though his hand was pressed over the opening in the nozzle, I saw the stone once more being cut (sawed is a better term) as marvelously as before.

I sank back in my chair, spent, exhausted, utterly limp with the nerve-tension, the excitement of the whole incredible affair.

Harris was grinning from ear to ear. "No wonder the natives thought the old king called on the Sun-God and the genii of the sky," he cried. "And you weren't so far off when you suggested the flask might hold a couple of imprisoned genii. Metaphorically speaking it did—it contained the genii that cut the stone. I——"

"I honestly wish," I said, "that you'd drop all that and explain *how* the marvel is accomplished. Just what *does* cut the rock?"

"A ray," he replied. "I thought I'd said so already. I don't know myself just what sort of a ray it is. Possibly it's just some new form of vibratory wave. But I call it a ray—though for that matter, what's a ray except a vibratory wave—and tentatively I've called it the Inti-ray in honor of the old chap who—according to the fable—called on Inti the Sun-God for help. You see I've been so busy getting the thing to work, I haven't had time to work out the peculiarities of the ray itself—its vibratory rate, its properties, etc. I——"

"But I thought you said the contents of the old flask solved the problem? How the deuce could anything in that flask help you to produce an

entirely new ray? I suppose you'll be telling me next that there was some electrical or magnetic or radio machine in the thing."

Harris smiled. "No, not that," he assured me, as though I'd been in earnest. "You see this ray—like a lot of others—is produced by some complex chemical reaction—some sort of decomposition, though no doubt the ray itself is an electric, a magnetic or an electronic phenomenon. In a way—well, perhaps I can make it clearer to you by comparing it to the current generated by a battery. In the cell—whether dry or wet—we have a chemical action, but the resultant current is *not* chemical. And I might further point out that by passing an electrical current through many substances, a chemical change is produced. Frankly, I don't believe I'd ever have succeeded if it hadn't been for the old flask that luckily contained two chemical compounds that were essential. "And—" he laughed heartily—"the funny part of it is, I'd had both those chemicals under my hands all along and had never thought to test them."

"What made you think the stuff in the jar had anything to do with the ray or the stone-cutting?" I asked him. "How did you know they were not poisons or—well, stuff used in ceremonies, for example?"

"By deduction and elimination coupled with plain logic and a fairly comprehensive knowledge of chemistry, plus a 'hunch'," he replied. "Having the solving of the problem of stone continually on my mind, everything new or inexplicable or puzzling became, subconsciously of course, associated with the problem. It's a habit I possess, and it has more than once helped me to solve seemingly insoluble problems in the past. You see one never knows when one may come upon the key to a puzzle. I work like a super-detective of fiction. Everything regarding which there is any question appears to me as a possible clue. And your flask came under that category. It was new, puzzling, mysterious. Neither of us could think up any reason for the thing, any use to which it might have been put. Consequently, I reasoned, it must have been designed for some purpose of which we were both ignorant. And naturally, first and foremost to my mind, came the stone-cutting. Then, when I found it contained some sort of material, I jumped to the conclusion that the material might and probably did have something to do with the same problem. And when I found the metal was different from anything known, I reasoned that it, too, was an essential part of solving the puzzle. Finally, when I got at the contents, I was convinced I was right and having long before theoretically reached conclusions and having reasoned out the soundness of my theory to my own satisfaction, I knew beyond any doubt that I'd found the secret. All I had to do was to construct a better and more efficient tank of the same metal as the flask, fill its compartments with the chemical compounds, subject them to the proper reagent, and—Presto! the thing was done."

"It all sounds quite simple," I said. "But I can't really believe it yet. To think that those old pre-Incans had

a knowledge of chemistry and rays! It seems incredible."

"I doubt if they did," declared Harris. "In all probility they hit upon this thing by accident. Such a thing is perfectly reasonable."

"But what *were* the chemicals and what sort of metal was used in making that flask?" I asked him.

"The metal was an alloy of gold and lead," he replied. "At first I mistook it for a new metal, but I soon discovered my mistake. The chemicals—well, I don't suppose you'd understand if I gave you their formulae, but both are of the radioactive group of metallic salts. One is derived from vanadate of lead, the other from a complex mercury ore that is quite common in Peru, especially at high altitudes. And the reagent is—well, spring water!" Then, seeing my expression of incredulity, he added: "But not common everyday spring water. It's a highly mineralized water with slight radioactive properties and I don't doubt you've imbibed many quarts of it—it's widely used in Peru."

I breathed a deep, long breath, almost a sigh. "No wonder the pre-Incans could do marvels in stone cutting," I observed. "But why do you suppose the secret was lost? Why wasn't it handed down? And—good heaven, Harris—I hadn't thought of it before; but your discovery will revolutionize the world! It will do away with rock-drills, tunnelling machines, dynamite—a thousand and one machines and devices for cutting, drilling and boring rock! And—by Jove! No wonder the Chavins could hew forts and buildings out of mountain sides. No wonder the old fellows here could cut that arch, that Huaro-Yana. It must have been mere child's play."

"I expect it was—for them," he agreed. "But I'm afraid you're over enthusiastic and optimistic as regards the benefits that will accrue to the modern world owing to the discovery of how the pre-Incans cut their stones. You see, as far as known, there is not enough of these mineral salts in the world to enable anyone to use the method on a commercial scale. Possibly that's why the pre-Incas lost the art and failed to hand it down—probably used up most of the material and didn't know where there was more. Possibly the old tale of devils may be allegorical of that fact."

"Well, you've solved the biggest mystery of the ancient races of America," I said. "And that's enough to satisfy anyone. Now you've explained the thing, it strikes me as rather remarkable that no one else ever hit upon your theory. But——"

"I don't agree with you," he interrupted. "I haven't solved the mystery any more than you have. If you hadn't dug up that old flask, I'd be no nearer proving my theory than ever. And someone has always got to be the first to think up some new theory. But I'm not done yet. I want to learn all there is to be known about that Inti-ray, as I call it, and I want to test the thing on a big scale—I want to try cutting a block of the solid mountain side."

Chapter V
The Invisible Inti-ray

I couldn't blame Harris for wanting to try out his discovery on a big scale, as he put it. I could quite ap-

preciate his desire to see the invisible ray saw through the solid mountain side and cut a mass of granite or diorite, weighing thirty or forty tons, from the mother rock. But Harris had even more ambitious plans. A few days after his amazing demonstration he informed me that he had calculated the amount of materials required to cut a definite amount of stone, and that he had enough or could secure enough from a deposit not far away, to enable him to do some cutting on a gigantic scale.

"Do you know what I plan to do?" he asked.

I shook my head. "Give it up," I said. "Cut a tunnel through the mountain so you don't have to come at breakneck speed down that grade? That would be to some purpose."

He grinned. "Not quite as big a thing as that," he assured me. "No, I'm going to duplicate that arch—the Huaro-Yana. Not on quite such a big scale, however. You see that basalt dyke to the west? Well, I'm going to cut—or at least try to cut—an arch through that!"

"But," I asked him, "why waste so much time and material on doing that? Isn't there anything of real use that you can accomplish with your apparatus? Why throw away all that material just for the sake of showing what you can do?"

"It won't be altogether a waste," he declared. "It will let the afternoon sun shine through—think how glorious it will be to see the sunset through the arch?—and besides, there's a second lovely plateau beyond that dyke. I can increase my property here. And somehow it appeals to my imagination—the idea of hewing a way through a vast mass of solid rock to reach a spot no man has ever trod before."

That was Harris all over—a queer combination of the romantic adventurer, the dreamer, poet and artist with the practical scientist and with his love of the spectacular fighting his detestation of notoriety.

But the strange kink in Harris' character or mentality was that it made no difference to him if nobody was aware of what he had done. His pleasure, his entire satisfaction lay in the doing—in the accomplishment. It was in the *empresa* as the Spaniards say—in the enterprise—that he gloried, and the more difficult a thing was the more he liked it. To solve the insoluble, to explain the inexplicable was as the wine of life to him.

Whether the world—or even fellow scientists—ever heard of his triumphs didn't interest him. Having solved the mystery of the pre-Incan stone work he merely wanted to do as much as the pre-Incans, and he frankly told me he had no intention of publishing an account of his discovery, although I was welcome to do so, provided I didn't give him all the credit.

The idea of bursting through a seemingly impassable barrier to reach a hitherto unknown spot was to him an even greater achievement than the amazing discovery he had made. In some ways he was still a boy, and just as a boy takes immeasurable delight in navigating a mill-pond on a home-made raft and landing on the opposite shore, so Harris would find inexpressible satisfaction in cutting through that forbidding dyke of basalt to reach the little plateau that lay beyond.

There was nothing marvelous, strange nor particularly desirable there. From the cliff tops one could gaze down and see every detail of the place. But neither is there anything new, strange nor unknown about the opposite side of the millpond. And—well, I might as well admit it—I was a little that way myself and was just about as enthusiastic at heart as was Harris. Besides I was rather curious to learn if Harris' apparatus could accomplish the feat.

But to my surprise he took no steps to carry out his plan. For several days he devoted all his time to painting, and apparently completely forgot the rock-cutting ray, the experiments and the basalt dyke. To my surprise the picture turned out to be a very striking view of the Huaro-Yana mesa as it must have appeared in the days of the pre-Incans.

With consummate skill and fidelity and accuracy that showed what a really deep knowledge of the subject he possessed, he had restored the ancient buildings and had peopled the scene with men and women dressed as the mummies I had found, taught us that the inhabitants of Huaro-Yana had dressed.

There towered the great black arch with its garrison of warriors upon its summit. There rose the vast temple with its magnificent sculptures and bright-colored frescoes. There were the palaces, the houses, the Inti-Huatana, the priests winding in a procession up the temple stairs. But most prominent of all, most vividly portrayed, was the group in the foreground of the painting. There, before a mass of the living granite stood a number of men armed with bars, wedges and rollers, while in their midst a superior-looking fellow held a vessel of gleaming polished metal and was cutting the rock—as I had seen Harris do—by means of the invisible Inti-ray. The picture was, in fact, a marvelous revisualization of Huraro-Yana to illustrate—far more clearly than was possible by words—the manner in which the pre-Incan inhabitants performed their seemingly miraculous feats.

It was by far the finest thing Harris had done, his masterpiece, and I complimented him unsparingly upon it.

"I don't know why I did it," he said with a sheepish grin. "It just came into my head and had to be finished before I could do anything else. You're welcome to it, old man. I don't believe it would interest anyone else. But it may serve as a sort of record some day."

Then, with the inspiration off his mind, Harris again vanished in the seclusion of his laboratory and workshops. From time to time, as we met at meal times or in the evenings, he'd drop a hint or a few words in regard to his investigations and work. Once he announced that he was busy studying the new ray. "It's an amazing thing," he told me. "As nearly as I can work it out, it's related to the gravitational ray. I——"

"Hold on!" I broke in. "What do you mean by 'gravitational ray'? I've always understood gravitation was like a magnetic phenomenon."

Harris uttered an impatient ejaculation. "You're out of date," he informed me. "Macdonald proved the existence of the gravitational ray

years ago. And what's magnetism but the effect of certain rays? However, as I was about to explain, this Inti-ray is the most remarkable ray I've ever studied. It has a speed of almost three times that of light rays and it's as rectilinear as the X-ray. It penetrates practically all metals—Even lead—as well as all organic substances on which I've tested it, without injuring them, but minerals are resistants and the alloy of gold and lead is impenetrable. It lies somewhere between my Z-ray and the infra-red, and it produces a cold, pale greenish flourescence in combination with certain substances. Do you know I have great hopes of being able to accomplish some astonishing results when I know more about its peculiarities and the laws that govern it?"

"Sounds interesting," I commented, "but as I don't know anything whatever about rays—except light and heat and sound rays, and mighty little about them—I'll have to take your word for the details. But there's one thing I'd like to ask: How can it penetrate certain substances without injuring or affecting them and yet cut that rock?"

"Simple enough," he declared. "Heat rays penetrate certain things—metals, cloth, etc—even glass, but not asbestos. Light rays penetrate glass, paper, water, various materials, but not metals. It's the same with electro-magnetic, sound and all other rays—even X-rays that are held back by lead. And as far as cutting the stone is concerned, that, as I have told you, is a chemical or electronic decomposition."

"Well, if you accomplish anything more astonishing than that, you're a magician and not a scientist." I told him.

A few days after this conversation, Harris announced that he was leaving Huaro-Yana for a few days—going after some of the minerals he needed—and told me to make myself at home during his absence.

"As soon as I return we'll be ready for the big test," he declared. "I have everything else prepared—the tanks and all the rest of the apparatus."

Instead of going by his car as I had expected, he set out afoot with a string of llamas and several of his Indians, and took a route to the south, in the opposite direction from Tucin. I was surprised to find how much I missed Harris' company. Although of late we had seen but little of each other, we did meet at meal times and in the evenings. Now, with no one to talk with and alone in the house, I had hard work to shake off the inexplicable and ridiculous sensations I have already mentioned.

At any rate I was heartily thankful when Harris returned with his llamas laden with sacks of the ores he required. He was worn, haggard, brown and weary, for he had had a long, hard journey over the highest ridges of the Andes, but he was in high spirits and announced that he had located a large deposit of the minerals—enough, he declared, to "cut fifty arches like the Huaro-Yana."

Evidently, too, his brain had been working overtime on theories and problems connected with the newly discovered ray and its properties and possibilities, for he hinted—mysteriously—at a new scheme he had evolved by which, if successful,

he would astound the entire world.

"But first the stone-cutting," he declared. "I don't know why it is so but the thing has got me going, as the saying is. Anyhow I can't settle myself down to work out the other—and the bigger thing—until I've cut a hole through that dyke. And"—with a sigh—"We'll get at that in a couple of days more."

Chapter VI
A Pre-Incan Scene Materializes

Harris kept his promise. Two days after his return he announced that all was in readiness for his great feat. Indians, llamas, even the car, were busily employed in transporting his apparatus from the workshops to the vicinity of the massive basaltic dyke that rose like a great black wall for fully two hundred feet above the eroded rock at its base.

At a distance of perhaps one hundred yards from the face of the dyke a staging platform was erected, and on this the apparatus was installed. Harris was in his element. He bustled about, directing, giving orders to the Indians, who appeared to regard the whole matter as uncanny and savoring of some impressive magical ceremony about to take place. He worked as hard himself as anybody, yet he took the time to explain this, that or the other to me.

"Have to begin cutting at the top, of course," he replied to one of my questions as to why the tall staging. "If we cut the bottom first, we'd be in a mess. And I've put the platform well back in order to get an almost direct incidence of the rays—don't want them to hit the rock at too great an angle, you see. Besides, there'll be the deuce of a lot of fumes generated, and they may be poisonous or injurious."

"But how are you going to get the pieces of rock out after you cut them?" I asked him.

"I've planned for that," he assured me. "I'm going to cut wide horizontal grooves and run them in at an angle. Then the weight of the sections as they are cut will break the masses free and they'll slide out of their own accord."

"Maybe," I replied, "but if one or more happen to jam you'll have some job on your hands."

"If necessary, I'll cut the darned thing into pieces so small we can pull 'em out with our fingers," he cried impatiently. "Anyhow, tomorrow we'll know whether it'll work or not."

Naturally we were keyed up and filled with suppressed excitement when, on the following day, we set out to make the assault upon the dyke. Even the Indians, usually so repressed in their emotions, were excited, and I noticed that they had donned their best dance or ceremonial garments, as if about to take part in some great religious celebration.

As we reached the vicinity of the platform, Harris warned the Indians not to stand near the dyke, but to keep to the rear of the staging. Then, noticing that a number of llamas were grazing on the scanty herbiage about the base of the dyke, he called to some of the men to remove them. As they were doing so he abruptly changed his mind, and shouted to the herders to tether two of the beasts midway between the dyke and the staging.

"What's the idea?" I asked him.

"Test of the fumes," he replied curtly. "I want to be sure whether they are injurious or not."

"Rather hard on the llamas," I observed. "Haven't you tested the stuff in your laboratory?"

He appeared to hesitate and seemed a bit put out. "To tell the truth, I have not," he admitted. "I've meant to, but there have been so many other things of more importance that I didn't get around to it. But I haven't felt any ill effects; in such small quantities as were in the laboratory I wouldn't expect to. But the fumes are heavier than air, so we're safe up here, and the llamas down below will be a certain test. Now for the great work!"

As Harris spoke he stepped forward, adjusted the valves just as I had seen him do in his laboratory, grasped the huge nozzle that was fitted with handles like the nozzle of a high-pressure fire-hose, and aimed it at the dyke. Never will I forget the scene: The great black rock wall before us, the two shaggy-coated llamas grazing unconcernedly in its shadow, the crowd of Indians, ablaze with color and silver ornaments, standing and squatting, motionless as bronze statues, in a semicircle behind us, gazing with fixed, wondering, expectant faces at the two white men beside the gleaming metal machines, tensely expectant of something, they knew not what; and finally, Harris, standing like a gunner behind the shining golden nozzle and squinting along its barrel, as if about to launch a projectile at the massive dyke. Absolute silence reigned. Not a sound came from the throng of Indians; even the birds and insects seemed to have ceased their chirpings in awe and wonder. Overhead stretched a cloudless sky against which the snow-clad peaks stood out clear as cameos, and far up in the blue vault a condor soared in endless circles.

Suddenly from the scores of Indians a deep, half-terrified sigh arose. Every eye was fixed, wide open, staring, at the face of the dyke. From the black rock a thin greenish vapor curled and drifted, and across the surface a broad, deep groove was slowly forming.

No wonder the Indians were frightened, filled with superstitious dread. It was uncanny, terrifying in its wonder. Even I who had seen the amazing demonstration in the laboratory, who had known what to expect, found myself gazing with bated breath and wide eyes at the ever-opening, ever-widening cut in the solid rock, that was now partly veiled in the wavering, drifting, tenuous fumes. Only Harris remained unmoved, unaffected. Steadily, calmly, he moved the great nozzle from left to right, up and down, until several hundred square feet of the dyke's surface was checkered with the deep, straight cuts his invisible, mysterious ray had gouged into the basalt. By this time the vapor had spread until it formed a fog-like screen over the lower portion of the dyke, and lay in wisps like mist above the nearby ground. One wisp half concealed the llama nearest to the dyke, but the creature appeared to give no heed to it, and continued to graze as unconcernedly as though the fumes were ordinary fog. Harris straightened up, turned off the valves and stretched himself.

"Gosh, I've got a crick in my back,"

he said, and somehow his matter-of-fact tones, his commonplace remark, seemed strangely incongruous and out of place in the presence of such a marvel as he had produced.

"Well, we've made a good beginning," he exclaimed, "but I'll have to find some way of getting rid of

those darned fumes—they hide the rock so I can't see what I'm doing. Guess I'll have to rig up a blower or a suction machine of some sort. At this rate, it'll take a month to cut a hole in that dyke. Anyhow, we know the fumes are harmless—those llamas don't mind 'em."

I glanced at the Indians. Men, women and children were gazing at Harris as if he were a deity—as no doubt

they felt he was. I touched his arm. "Look at the Indians," I said.

He turned, and instantly every Indian bobbed his head until his forehead touched the ground. "Darned idiots!" ejaculated Harris. "Anyone would think I was their high-priest."

"No, their king—and God," I corrected him. "They remember their old legend and in you they see their mythical ruler summoning the Sun-God to aid you with his 'fire' to cut the rocks. I haven't any doubt they expect to see the 'sky-giants' materialize at any moment and pull the cut rocks out of the dyke. You see, they still believe in the old fable."

"So do I," was Harris' astounding declaration. "Well, here goes again!"

As he spoke he once more opened the valves, seized the nozzle and once more proceeded to cut deep scarfs across the basalt wall. I could not take my eyes from the rock. It seemed too marvelous, too impossible, too incredible to be real, and the effect of unreality in the feat was increased by the ever-spreading, greenish vapor that gave one the impression that the rock wall was visionary, the sort of thing one sees in that brief interval, twixt sleeping and waking, a hazy, intangible dream—creation that might vanish utterly at any instant.

But the Indians were real enough, the llamas were real, Harris and his shining metal apparatus were real, and as from time to time the fumes parted with some breath of wind, the black wall loomed as solid and as real as ever.

Then, as I gazed, unable to withdraw my eyes from the dyke and the ever-increasing grooves being cut across its face, I started, stared transfixed. In the centre of the drifting vapor a pale, luminous spot had appeared, a diffused circular patch of light like the sun shining through dense fog. What did it mean? What new phenomenon was this?

Tense, with throbbing pulses, I focused my wondering eyes upon the spot. The light was spreading, it seemed to emanate from the rock hidden behind the misty veil. In itself it was nothing startling, nothing uncanny, yet I felt an involuntary shudder and a haunting unreasonable impression that some extraordinary event was about to take place.

At the same instant the thing happened. It was sudden, instantaneous. It seemed to spring in a blaze from the depths of the vapor or from the rock wall behind it. A blaze of light, of a multitude of colors, of vivid hues swirling, gyrating in an ever-widening circle. I can think of nothing with which to compare it save a kaleidoscope. One instant there was a multi-pointed star, the next a rosette, the next it had been transformed into an octagon, a pentagon, a series of concentric rings.

I grasped Harris' arm spasmodically, pointing, speechless. But he, too, had seen the thing. He was gazing at it as wide-eyed, as unnerved, as shaking as myself. The Indians, too, had seen it. Half-consciously I heard their deep sigh of terror, of awe, and I knew, though I could not turn my head, could not tear my eyes from the amazing phenomenon before me, that they were gazing at it, fairly chattering with deadly fear.

A great relief swept over me, for if Harris saw it, if the Indians saw it, then it was no illusion, no hallucination of my overstrained senses.

Now the thing had changed. The radiant colors, whirling around a fixed point, seemed to slow down. Luminous spirals, points of color, darker spots moved, gyrated, vanished. Then, like one of those trick moving pictures in which various dismembered portions of a thing rush into place upon a screen, the detached bits of color, of light and shade, appeared to join, to blend, until a vague, floating picture seemed to form behind the hazy veil of vapor. Indistinct, indistinguishable it hung there, blurred like a poorly focussed semi-opticon view. Then, gradually, as we stared silent, bereft of speech and motion, certain features became clearer, more pronounced. Outlines took form, colors became intensified, and with a sudden burst of light, a dazzling picture was revealed, a picture as clear and sharp as if painted upon the surface of the rock.

A gasp of utter amazement escaped from my lips. I felt Harris start and give vent to a sharp ejaculation. The picture so magically revealed before was almost a replica of Harris' painting. There were the same temples, the same palaces, the same great arch. There in the foreground was the group of men with one of their number cutting the rock. But—before our eyes, utterly incredible as it seemed, impossible of belief, the figures moved, breathed—they were alive!

It had all happened in an instant. I doubt if five seconds had elapsed between the time I first noticed the struggling circle of light and the completion of that supernatural scene. And scarcely had the picture appeared from out the veil of greenish mist, when it vanished. The vapor drifted apart, the black basalt again stood revealed, and where the utterly impossible picture had been was the solid surface of the dyke.

Speechless I stared at Harris. Dumbly he gazed at me. What had happened? How had his paintings, half a mile distant and in his house, been reflected upon the wall of rock? These were the questions that filled our minds. Yet I knew, Harris knew, that the vision had *not* been a reflection of his painting. It had been similar but not the same and—I shivered at the thought—the figures we had seen so vividly had lived, had moved!

I felt as if I had gone suddenly mad. I wondered if it were not all a form of my insanity—if I were not imagining that Harris and the Indians had seen the vision. I felt like screaming, like giving way to hysterics.

And then suddenly Harris seemed to go mad. He jumped into the air, he shouted, yelled, danced, threw his hat violently upon the platform, pounded me on the back, jerked me by the arm. Horror, pity, fear of Harris' mental state drove all my own worries, my fears of my own sanity from my mind. Harris *must* be insane. His overtaxed brain must have given way. Evidently the Indians felt the same way. With wild, terrified cries they were rushing off in every direction. Only the tethered llamas remained calm, placidly chewing their cuds.

Presently Harris dropped, ex-

hausted, on the platform. "Success at last!" he panted. "Triumph! It's wonderful! Marvelous! Incredible! And by accident, by chance! The dream of my life come true! The impossible accomplished!"

With a tremendous effort I controlled myself, strove to speak calmly, quietly, for fear any trace of my excitement might again send him into a fit of madness.

"Yes, yes," I said soothingly. "Of course it was wonderful, everything you say. And of course I cannot understand how your painting seemed to appear upon the rock here."

Harris leaped to his feet, wild-eyed, apparently beside himself.

"Painting!" he almost yelled. "Painting, indeed! What you saw—what I saw, was real—the actual happening! Don't you understand? Can't you guess? Good God man, we've looked into the past. We've brought back things that happened three—five—no one knows how many thousands of years ago! And the ray did it, the ray brought them back from space! It's what I've dreamed of doing, of trying to do for years. It's the most wonderful, the most astounding and important accomplishment ever effected. I'm staggered at its possibilities. But this was accident—pure chance! I must improve it, learn the secret, develop it. Come, there's no time to be lost!"

Forgetting everything else, the apparatus, the rock-cutting, Harris hurried from the platform, fairly dragging me with him, and actually raced toward his laboratory. But before we reached the buildings, he began to calm down.

"You must think me mad," he exclaimed with a laugh. "I wouldn't blame you if you did. I——"

"I'm not so sure we're not both mad," I replied, interrupting the words. "If we're not, how could we both have seen that—that vision or picture, or whatever it was?"

"Two people never go mad at the same instant and in the same way," he reminded me. "We both saw the same thing at the same time—so did the Indians. Therefore what we saw was there. And neither you nor I believe in visions, spirits, ghosts or the supernatural. Hence the thing was natural—the result of certain laws and conditions. But I knew that the moment I saw it—you see I had the advantage of you. I almost expected something of the sort to materialize. I——"

"Look here!" I cried impatiently. "You're talking in riddles and contradicting your own words. For Heaven's sake, get down to concrete facts and talk sense. Tell me what you expected, why and what the whole incredible thing means."

"When I said I rather expected the thing, I was speaking more or less figuratively," he began. "I'd been working, puzzling along these lines for years and I'd pretty well come to the conclusion that the new Inti-ray might hold the secret that had escaped me all along. So I expected, and hoped, that some development, some property, demonstrated in using the ray, might convince me it was what I sought. But, excuse me, old man, I'm getting the cart before the horse again. I keep forgetting you are in the dark. I must begin at the beginning to make you understand. But first about that—er, well—picture we saw in

the fumes. As I said before, it was no picture; it was actuality. You don't get what I mean, but it's plain enough to me, and will be to you in a moment. You thought, perhaps for a brief instant, that it was a reproduction of the picture I painted. Why?"

"Naturally I thought so—at first," I told him. "It was the same thing—temple, palaces, arch—even the costumes and people. Only——"

"Exactly!" he exclaimed, not waiting for me to finish. "Because the same scene was reproduced, my painting immediately occurred to you, as I confess it did to me. But why shouldn't there be a resemblance? The arch is here, the temple, palaces—everything. I simply restored them, as I did the people, the costumes, the occupations. And"—he chuckled—"I happened to make a darned good job of it. That's a credit to you, too, old man! You told me how the things should be, you know, so you have the satisfaction of knowing your archeological knowledge was true and your deductions correct. Still, there were a lot of details wrong. The high-priest had a different robe and headdress from the one I painted. The columns of the temple were green, not red; and the palace facade was blue instead of yellow. And there were rope-ladders leading to the top of the Huaro-Yana. And another thing—the chap holding the metal flask and using the ray. He was on the left, not on the right like mine, and farther away. And—I noticed that particularly, he had a spout on the neck of the flask—a sort of nozzle. And——"

Chapter VII
Harris Explains His Theory

I did not avail myself of Harris' permission to try my hand at cutting the dyke with his ray machine. I didn't relish the idea of standing there alone and perhaps evoking another of those startling scenes from the past, and Harris' last cautionary words regarding the order of opening and closing the valves had hinted of danger in monkeying with the thing. But I was curious to examine the results of his operations, so I made my way to the big dyke. Harris had been right in his calculations—as he seemed always to be right in whatever he undertook—and I found that two great masses of the rock had broken free and had dropped to the ground at the foot of the cliff. They were about twelve feet in length by ten feet wide and four feet in thickness. The ends, where they had broken free by their weight, were rough and crystalline, but their four surfaces, that had been cut by the ray, were as smooth and almost as even as though they had been planed off.

A great cavity in the dyke marked the spot whence they had slipped out free, and I realized that if Harris had continued at the work, a few hours would have sufficed to have cut an opening completely through the wall of solid rock. I then made a careful examination of the surface of the dyke where, as nearly as I could judge, the miraculous picture or vision or whatever it was, had appeared. I could detect no peculiarities, no differences in the basalt at this spot, and in order to be sure

that I had made no mistake in the location I again climbed upon the platform and tried to visualize the scene. And when, feeling sure of myself, I calculated the size of the scene that had appeared so mysteriously, I found that, as Harris had said, the human figures we had seen in the fumes had been fully life-size. But with that commonplace, prosaic rock before me, it was difficult to believe that the thing had ever occurred, that it was not all a dream. Still, there was the platform with the ray machine upon it; there were the deep grooves Harris had cut in the face of the dyke; and there were the great blocks of stone that had fallen from it. No, it had been no dream, and yet, try as I might, I could not force myself to believe in Harris' explanation of what we had so clearly seen.

For a couple of days thereafter nothing worth recording occurred. My mind still dwelt upon the visionary scene we had witnessed, but by dint of hard work and by keeping my brain occupied by writing up my archeological notes, I kept the other matter submerged. And Harris made no comments in regard to his work except to report that all was progressing as well as could be expected. On the third day, however, he became more communicative and informed me that he had at last established certain facts, although, he admitted, he did not himself know the precise reasons for them. "The fumes serve as a rectifier or transformer," he said. "The Inti-rays, when passed through the fumes, become altered to visible light-rays or perhaps they produce effects upon the fumes that result in the reflection of light-rays in such a manner as to render the Inti-rays visible."

I began to understand, to grasp his amazing theory, and to realize how reasonable, how plausible were his deductions. As he said, was the materialization of a scene from the past really any more remarkable than the materialization of a sound from a multitude of radio waves? For that matter, wasn't it, in a way, the same thing as television, with slight variations and on a larger scale? Views, scenes in Europe were transmitted every day to America and *vice versa*. Anyone could "tune in" and gaze at some distant spot and could see the living, moving men and women on their screen. And though the interval between the actual happening and the reception of the picture was infinitesimal, still there *was* an interval and, strictly and scientifically speaking, the person viewing the transmitted picture was looking at a scene that had occurred in the past—even though the past was but the fraction of a second distant. As far as I could see, about the only real difference between such a feat and the seemingly miraculous feat Harris suggested, was the difference in distance and time. So it was with an entirely altered mental attitude that I listened to Harris' next words.

"The great trouble," he observed, "will be to 'tune in' and secure clear, distinct pictures. Until I get the hang of the thing, I'm afraid there'll be a good deal of interference, and I haven't the most remote idea of how to bring in the views in their regular

sequence. I'll have to fish around in the dark, so to say, trusting to pick up a piece here, another there, and then, by carefully noting the conditions and correlating the results, I think we'll be able to get somewhere.

"That's where I count on you, old man. You'll be able—or should be able—to determine the sequence of events. But the real thing I'm after isn't the record of things here. That will interest you no doubt, and it will enable you to settle many mooted questions of archeology. But what I'm trying to get, what I've had in mind for years, are views of the planets, or the planet, where these impressions are recorded. Think what that will mean if I succeed! We'll be able to see the details, the vegetation, even the life, if there is any!"

"Fine!" I commented. "But I'm afraid, Harris, that you'll have just as hard work making people believe you have accomplished that as I will have in convincing my fellow archeologists that I possess first-hand, irrefutable knowledge of the life of the pre-Incans. It will all sound like the wildest sort of a fairy-tale to the rest of the world."

"No it won't," he declared. "Once I get the thing under perfect control I'll demonstrate it in all the great scientific centres. You don't suppose I'll stay here and look at one spot in the universe, do you?"

"Judging from some of your statements I should not be surprised if you found the thing didn't succeed elsewhere," I said.

"I think we'll have to begin just where we left off," Harris announced. "I'm working in the dark more or less and while I hope eventually to simplify matters, at present I know of no way of bringing in a scene other than by turning the ray on the basalt and producing the fumes."

"Rather inconvenient if you carry out your plan and demonstrate the thing elsewhere," I observed. "It won't be the easiest thing in the world to carry a basaltic dyke from place to place to serve as a screen. And you'd have to provide a lot of them—they'd be cut into bits and destroyed after a few demonstrations!"

"Oh, dry up and stop your nonsense!" cried Harris with a good-natured grin. "Here," he continued, with something in the manner of a professor giving a lecture to his class, "is a special camera. My idea is to take motion-pictures—in colors of course—of the whole thing, the rock-cutting, the fumes, the views we obtain—if we do obtain them. Then we'll have a record no one can question. I might have used an ordinary camera, but this is my own invention and is far superior. It takes the pictures at the rate of 25 per second and reproduces natural colors perfectly. This"—turning to the projector-like device—"is a combination revolving mirror and camera. You see a motion-picture, when viewed with a rotating mirror, is broken up into separate images, whereas an actual scene is not. I——"

"Good Lord, you don't suspect the vision was a movie, do you?" I exclaimed.

"No, but one never can tell," said Harris. "How do we know that some being on some distant planet may not be projecting some unknown form of motion-picture on the cliff before us? How——"

"Be yourself Harris!" I cried. "That's an absurdly impossible idea if ever there was one."

"Why?" he shot back. "I admit it would be impossible by means of light-rays, but how about the Inti-rays or other unknown rays? For all we know there may be beings on Mars, on Venus, on any planet as much beyond us in scientific knowledge and attainments as we are beyond the apes. And if so they may have learned—ages ago, how to take photographic views of occurrences here on earth, using Inti-rays or other rays for the purpose. Then when, once more—after a lapse of thousands of years—the Inti-rays were again used here, they may have seen their opportunity, and in an effort to communicate with us, they may have thrown the pictures back on the vapor-screen, imagining, of course that we possess enough intelligence to understand. For that matter they may have assumed that we are the pre-Incans. A few thousand years to them may be no more than as many hours or minutes to us. But we'll be certain when we see the records made by the revolving mirror."

I shrugged my shoulders hopelessly. "It's all so damnably preposterous, I honestly can't draw the line between the impossibility and possibility of anything," I confessed. "But one thing's certain. Unless you succeed in getting a picture, you won't be able to prove or disprove anything."

Chapter VIII
Impressions Stored on Eros

Although Harris's initial preparations were precisely the same as when he had started to cut the rock, yet I felt even more excited and tense than on the first occasion. As for the Indians, they were filled with awe, but not knowing what to expect, or whether Harris was merely repeating the strange rites of the first day, they simply stared, awaiting any amazing, magical demonstration that might take place.

Only the tethered llamas were not there, for having clearly demonstrated that the fumes were not injurious to animal life, they were not needed, and were allowed to wander and graze at will.

As before, Harris adjusted the valves, grasped the nozzle and turned the ray upon the great dyke. But this time, as his object was to produce a dense screen of fumes and not to dissect the stone, he adjusted the nozzle to project a wide stream (if I may use the term) upon the rock near its summit. Instantly a broad, shallow groove appeared in the basalt and dense clouds of the greenish vapor began to form. Then, connecting an attachment that he had prepared, which, by means of a small electric motor, moved the nozzle back and forth and up and down, Harris turned to his giant camera, and started the mechanism that exposed the film. Then he sprang to his rotating mirror, set that in motion, and gave

his attention to the dials and levers on other instruments, always keeping his eyes fixed upon the fumes that were now rolling, writhing and steadily descending, like a slowly flowing cataract of pale translucent green, over the face of the dyke.

Slowly the minutes passed. Only the clicking of the camera's mechanism, the low hum of the motors, the whirring of hidden mechanism, broke the silence.

With eyes glued to the dense screen of vapor, we watched eagerly but nothing happened. Heavier and heavier became the fumes as the ray cut deeper and ever deeper into the basalt, but no change, no sign of the vision broke the billowing masses of vapor. Then suddenly, when I had given up all hopes, I saw Harris grow rigid, a sharp exclamation escaped him, and once again I saw that dim, faint glow slowly illuminating the green depths of the fumes. Rapidly the light increased, a myriad colors flashed, gyrated, swirled amid the fumes, and then abruptly, as though a misty veil had been torn aside, a marvelous picture was exposed; a scene so vividly real, so deep in its perspective, so glowing with atmosphere and light, that I seemed to be gazing through a window in the rock at some actual view beyond.

Once more I was gazing at Huaro-Yana of the past. There loomed the great black arch; there was the temple with its green columns, the palace with its ornately decorated facade of dull-blue, and there once more were the people—men and women—in the costumes of centuries gone. But this time, no high-priest was leading a procession up the temple stairs, no workmen were lifting the blocks of rock cut by the ray emanating from a metal flask. Instead, the people were in gala dress, they shone with ornaments of burnished silver and gold, their ornate headdresses of feathers flashed in the sun, and all were dancing—weaving back and forth, in and out—to the music of drums and flutes played by musicians in the foreground. So full of motion, so perfect in its rhythm and so realistic in every detail was the vision, that I half-turned my head, striving to catch the music, the cadence of the dance.

I seemed to have been watching the scene for minutes yet—as we knew later—it was less than ten seconds before it began to fade, to grow dim, as though a thin gauze veil had been drawn across it. Then, more rapidly, it blurred, the forms and colors merged, and like a dissolving view it vanished. Before my eyes the masses of green vapor billowed and rolled down the face of the dyke.

A deep half-groan, half-sigh came from the assembled Indians. Harris, with a sharp exclamation, sprang to the camera and swung a switch. Hardly conscious of my surroundings, I stood spellbound, my eyes still fixed upon the spot where the vision had been.

"Wonderful!" gasped Harris, and at his words I came back to earth. "A perfect image! But I can't understand why it vanished—why it didn't continue as long as the ray was operating and the fumes were present. I'll——"

"It may come back," I suggested.

"Something may have interrupted it. Don't shut off the machines. Let's wait."

Harris nodded, and silently, with eyes fixed on the eddying mass of vapor, we waited and watched for a reappearance of the miraculous-seeming vision. But nothing appeared. The sun swung towards the west, the shadows lengthened, and at last, satisfied that there would be no second manifestation of the marvel, Harris shut off the apparatus, and slowly the clouds of vapor drifted away.

"Well," he sighed, as he drew a reel of film from the camera and another from the rotating-mirror machine, "we'll have a record of it unless——"

"Unless what?" I queried, half-suspecting what was in his mind.

He laughed, a forced hoarse sort of laugh. "Well, unless—unless the darned thing wasn't there!" he finished.

"Nonsense!" I cried. "We both saw it. The Indians saw it. It was there."

"Hurrah!" he exclaimed joyously. "At last the Doubting Thomas is convinced! Of course it was there and I'll wager any amount I've got a bang-up picture of it."

Harris was right. The film, when developed, showed everything—the cloud of vapor, the great groove cut in the cliff, the unfolding of the vision, and every detail of the scene exactly as we had seen it. And Harris was jubilant when, having developed the photographic records of the rotating mirror, the results proved beyond a doubt that the vision we had seen had been no artificially projected picture from some mysterious and incredible cinematograph-like machine on another planet, but an actual happening, as real as though it had been transported into the past for a thousand years or more and had watched living pre-Incans dancing at Huaro-Yana.

Harris, however, was greatly puzzled and perturbed. He was at a total loss. The picture had come and gone exactly as had the first, and he freely admitted that he didn't believe his carefully designed instruments had had any effect upon its appearance. And he didn't attempt to account for the detached view—the single fleeting glimpse—having burst upon the vapor and then vanished.

"If the thing worked right, we'd see a continuous performance," he declared. "There's no reason why we shouldn't see everything that was going on from the time the picture appeared until the ray ceased to function. It ought to continue without interruption all through the afternoon. But instead, we just get one flash, like a snapshot, of what was taking place. However, I've accomplished something. I've got a photographic record to prove the thing, and when I've worked out my spectroscopic and other records, I'll know a lot more about the phenomenon than I do now.

"As a matter of fact I didn't really expect my instruments to help much. As I said, I was working largely by guesswork. But still I *do* think the picture was clearer, sharper than the first time."

The next day we mounted the platform again and repeated the

operation of the preceding day, but nothing appeared, and at last, wholly at a loss, we gave up at noon; utterly baffled we returned to the house.

As we were eating our midday meal, Harris suddenly dropped his knife and fork and leaped to his feet.

"By Jove, I have it!" he fairly shouted. "Why didn't I think of it before!"

"Got what?" I demanded.

"The reason we didn't see a picture today; the reason the thing vanishes. It's a question of time. Rember, we saw the first picture between two and three o'clock. It was between two-thirty and three that we saw the next. Then, today, we waited until noon and saw nothing. I'll wager, if we go back between two and three, we'll see another view. It——"

"Possibly you may be right." I agreed, without waiting for him to complete his sentence. "But honestly I fail to see why time should have anything to do with it. In the first place, whatever it is, or rather, however the thing is brought about, the rays that carried the scene in the first place must have been going on continuously—not confined to any one hour. In the second place, the place—Huaro-Yana—and the people, must have been here right along. And in the third place, if the scenes—the impressions—are somewhere, stored away in space or on another planet as you claim, why shouldn't the Inti-ray or the fumes or whatever it is, bring them back to us at one time as well as another?"

"You overlook the most important thing," Harris told me. "I explained that the rays are strictly rectilinear—that they go straight and parallel, as I might say, and I even stated that I feared we could only secure revisualizations of events that occurred here at Huaro-Yana for that reason. So the way I look at it is this: Just as the scenes we can restore are local, so the area whereon they were stored or recorded must be restricted. It's as if they'd been reflected in a mirror at a distance and that mirror reflected them back to a mirror set up here. Unless the two mirrors were in line and placed at the proper angle or plane to each other, there wouldn't be any reflection visible. And as the earth is rotating on its axis, there would be but one short period of time when it would be possible to 'line up' the rays so the scenes would appear. Of course that's a crude way of putting it, but it's the only way I can make it clear to you."

"Thanks for your opinion of my mentality," I laughed. "But I think I see your point. However, another idea has just occurred to me—or rather several ideas. First: If, as you assume, the scenes were recorded on another sphere and that sphere is rotating as it must be, it seems to me the chance of getting the two points upon the surface of this earth and that sphere 'lined up' as you say, would be infinitesimal. And if both spheres are rotating and have been for thousands of years, wouldn't the time when the two points come into line vary daily? Finally, how does this theory strike

you? Isn't it possible that on that other sphere there is a similar dyke to the one here and that the phenomenon is the result of some chemical peculiarity of the rocks, so that it would not be possible on any other portion of earth or on that other planet? Your simile of the two mirrors gave me that theory."

"Yes, I'd thought of that myself," declared Harris. "But I can't find any peculiarity of the basalt here. It's in no way different from any other basaltic dyke. But there is a possibility that on another planet there may be fumes—vapors—identical with that which we produce by the ray, and that the scenes were impressed or recorded on that. I don't think the theory tenable, however. Such vapor must move, must be tenuous, and hence any scenes recorded upon it would be broken up, would disappear. As for your other arguments, I admit there would be a constant change of time, but how do we know that the other sphere's rotational speed may not be such that it compensates for the earth's lag? But we're talking on theories, mere vague suppositions. We don't actually know anything about the matter—we don't even know if there is another sphere in the problem. But come on—let's see if my idea of the time isn't correct."

So once more we went to the platform and prepared for the reception of the phenomenon. And this time, just as Harris had prophesied, the picture appeared—precisely at two forty-eight. It is unnecessary to repeat the description of its materialization. In fact, we had now become somewhat accustomed to it, and watched it with less excitement and more analytically. In fact, the only manner in which the view that was vividly developed before us differed from those we had seen was in the actions of the people. We had seen them cutting the stone with the Inti-ray; we had seen them dancing; and now we saw them at their everyday duties. Some were cultivating the ground; in the distance, herders were tending flocks of llamas and alpacas; in the shadow of a building, women were weaving cloth on crude looms; and under a shed a potter was moulding earthenware vessels. I even caught a glimpse of a metalsmith working over a little furnace, but he was soon hidden from sight by a group of men who gathered about him, apparently interested in watching him at his art.

Harris was elated. Not only had his time theory worked out—for no other vision appeared, although we waited throughout the afternoon—but he insisted that the length of time the scene had been retained was due to his instruments and the manipulation of the controls.

"I'm making headway at last, thank heaven!" he cried. "I'm beginning to get the hang of the thing. The next time I'll keep the impression before us for at least fifteen minutes—perhaps more. Eventually I may be able to hold it for an hour —perhaps keep it continually there."

"In that case your time theory will be shattered," I reminded him. "Besides, you'll exhaust your supply of the ray-producing minerals."

"Don't worry about that," he advised me. "I've found how to make the stuff artificially. And as for my time theory—that's the key to the success of the thing. I kept this view ten minutes by adjusting my instruments to compensate for the movement of the earth. Now, if I can only calculate the speed of the other sphere—if there is one—I can adjust the instrument to keep pace with that, and so retain the views in perfect alignment continuously. It's not such a difficult problem after all; a good deal on the principle of taking photographs of the sun or any other planet in doing which we have to keep the telescope focussed on a certain spot regardless of the fact that both the earth and the other planet are moving. But, hang it all, in this case I don't know what the other planet is, or where it is, or if there is a planet in the case. But I'm going to find out before another day has passed."

Whether or not the unusually long period of time that the scene had endured was due to Harris's instruments, I did not know. But if he was right, if he could so adjust his apparatus as to keep accurate pace with the planetary movements, then I could see no reason why he should not be able to do as he claimed and retain a continuous picture for some hours upon the vapor.

I saw nothing more of him that evening. He did not come to dinner and it was not until nearly noontime the next day that he put in an appearance. His haggard face and the dark circles under his keen eyes told me of all night work even before he spoke. "I've got it!" he ejaculated, throwing himself into a chair and gulping down a cup of strong black coffee.

"Got what?" I asked. "You'll get nervous prostration or something worse if you keep this up, old man."

He shook his head. "I'd get a lot worse lying awake and trying to puzzle it out in my brain, than by going at it with paper and pencil," he declared. "But it's done. I've worked it all out—the question of the other sphere, you know—the place where the impressions are stored away, and now I've got that determined I can work out the rest. Today, tomorrow, we'll be the first human beings to look upon the surface of another planet as clearly as though we stood upon its surface. Think of that! Think of what marvels we may see!"

"But what *is* the planet?" I asked, half-convinced that Harris had overworked his brain and was suffering from an hallucination.

"What is it?" he repeated. "Guess!"

"Hmm, I presume it's Mars or perhaps Venus or Mercury," I replied. "Let's see. I'm no astronomer, but if I'm not mistaken Venus would be visible in the afternoon."

"Wrong!" cried Harris. "It's Eros!"

"Eros!' I reiterated. "But Eros is an asteroid—it's outside Mars."

"Yes, ordinarily," admitted Harris. "But if you were as familiar with astronomy as with archeology, you'd know that although the orbit of Eros —and other asteroids—is outside that of Mars, still, at certain times, owing to the nature of its orbit, Eros —and probably other asteroids as

well—approach to within fifteen million miles of the earth, whereas thirty-five million is the nearest we ever get to Mars as in 1909 and 1924. And it happens that at the present time, Eros is at its nearest point to our old earth."

"But, but," I objected. "Isn't Eros a small—a tiny sphere? Why——"

"Don't ask me why!" cried Harris petulantly. "I don't know why anything. But it's Eros, I'm positive. Yes, Eros is small—a mere pin-point in the ordinary telescope. We don't know anything about it and that'll make it all the more marvelous to look upon. Why, man alive, it may be inhabited! And think what the denizens may be like! No one can think, no one can imagine. On Eros you, I, any normal man could easily lift a ton in one hand. We could fly for miles through the air by using muscular energy required to take a step here on earth! Talk about Columbus! Talk about explorers, discoverers! Why, we're about to go on the most amazing voyage of discovery in the entire history of mankind!"

"Provided," I reminded him, hoping to calm him, for he was becoming almost feverishly excited, "provided you can succeed and can produce a scene from Eros upon the vapor. I don't believe you can, Harris. I'm willing to admit that the ray impressions of past scenes on earth may be stored or recorded on Eros or on any other heavenly body, and that you may be able to 'tune' them in, as you once aptly put it. I've seen the visions and astounding, incredible as they are, I cannot doubt the evidence of our senses. But I don't see that that proves that it is possible to bring in a scene that exists on another planet or planetoid today. In fact, it would seem to me that scenes from Eros must be impressed invisibly here, and that the people of Eros—if there are any—would find it much easier to bring scenes of their past back from here than for you to bring scenes from Eros to earth. So far, we haven't had a hint of anything, aside from scenes that took place here. If your scheme were possible, why shouldn't we have had glimpses of Eros already?"

"Why, why, why?" cried Harris jumping up and pacing back and forth. "You're forever asking *'Why?'* How the devil should I know? Nobody knows. Perhaps nobody ever will know! Why does the earth rotate? Why do we live? Why are we here? Why life anyway?" Then, suddenly calming himself, "I'm sorry, old friend," he said apologetically, "I didn't intend to be rude or impatient, but the thing's got under my skin and that infernal "WHY?" is hammering in my brain continually. If you'll pardon me, I'll go get a bit of sleep. I can't do anything today—haven't had time to prepare the instruments I want. But tomorrow—well—we'll see what we shall see."

Chapter IX
The Battle Scene Retained on Eros

Harris slept soundly for several hours and arose much refreshed and once again his normal, good-natured self. During the afternoon he busied himself in his laboratory and workshop. He worked late that night,

and he was up and deep in his work when I arose the next morning, But he came to the house for lunch, and with a deep sigh of satisfaction announced that he was ready for another demonstration.

"This time," he stated, "I believe we'll get a glimpse of Eros itself, unless I'm off in my calculations."

I had, however, been improving my knowledge by reading the works on astronomy that were in Harris's library, and I had assiduously studied everything I could find that related to Eros. So I was ready to ask a question that, I flattered myself, would rather surprise him.

"I don't exactly see how you can accomplish that today," I observed. "Isn't the dark side of Eros presented to the earth this afternoon? In that case how can you see anything upon it?"

Harris laughed. "Been studying up on Eros, eh?" he observed. "Yes, you're right, but why should darkness have anything to do with the matter? You forget that we are not seeing things with light-rays, and the Inti-ray is present in darkness as well as in light. By the way, as you have shown you have an increasing interest in astronomical phenomena, let me ask you a few questions and—as I'm quite sure you cannot reply— give you the answers. You speak of 'darkness.' I suppose you picture space (so-called) as being dark?"

"Yes, why not," I replied promptly.

"Wrong!" he cried in much the same tone a boy will use when playing a guessing game. "If you were in what is commonly called 'space' you'd find light—blinding light—in fact such light as neither you nor any human being can imagine or conceive of; a glare like that from a vast furnace. And the most amazing feature of it would be that it would be cold light—practically absolute zero."

"I can't believe it," I told him frankly. "If space is light, how is it that after the sun sets we have darkness?"

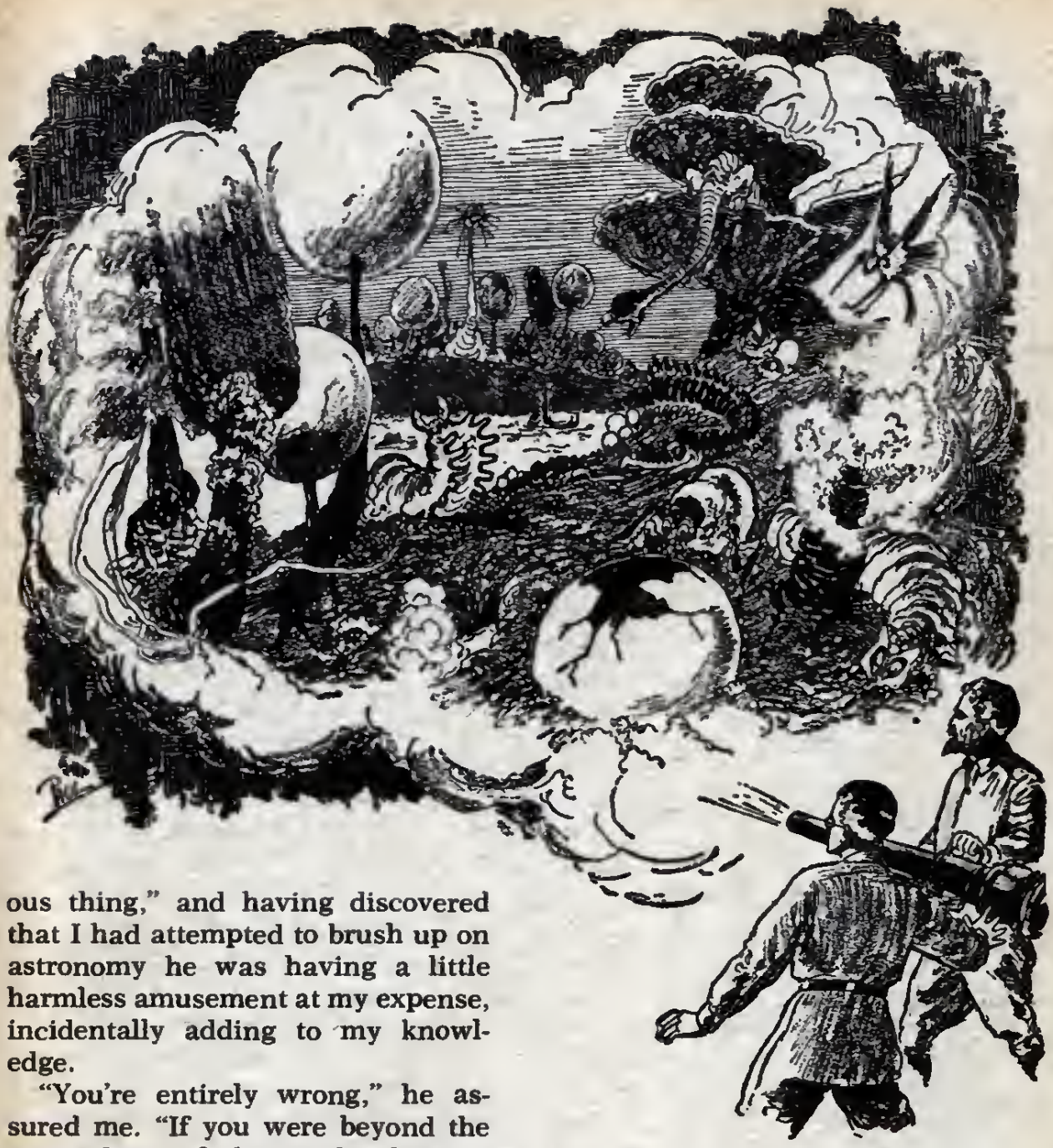
"Our own earth shadow," he replied, "thrown upon our atmosphere. If you should step into an airplane and go up a few hundred feet, you'd find it light enough."

"Naturally," I said, "for I would then be in sight of the sun."

"Or rather out of the earth's shadow," he retorted. "But if you could get off into space beyond all shadows, you'd find the blinding glare perpetual. There'd be nothing to interrupt it, nothing to absorb it and no atmosphere to soften and filter it. Now, for another question. If you were off there in space, how would Mars appear? What color would the sun be?"

"I suppose Mars would appear as a great red sphere," I replied. "And the sun would be a fiery, glowing, incandescent mass."

Harris chuckled. There was nothing he enjoyed more than tripping up people on scientific questions and then setting them right. Not that he ever bothered doing so with men who made no claims to scientific knowledge. He didn't expect them to know the answers. Neither would he amuse himself in this manner with specialists in other lines than his own; but he believed thoroughly that a "little knowledge is a danger-



ous thing," and having discovered that I had attempted to brush up on astronomy he was having a little harmless amusement at my expense, incidentally adding to my knowledge.

"You're entirely wrong," he assured me. "If you were beyond the atmosphere of the earth, the sun would appear as a brilliant blue sphere and Mars would be green."

"But enough of this. It is time we were off and getting ready for a glimpse of Eros."

As usual, by the time we had reached the platform, the Indians had gathered *en masse* to watch the magical ceremony, as they considered it. How they knew when we were about to 'perform,' by what inexplicable means they communicated with one another, I never learned. But despite the fact that there were now half a dozen Indians in sight when we left Harris's house, yet by the time we reached the vicinity of the dyke, a crowd would be on hand. It was as mysterious and very like

the manner in which buzzards will flock to a dead beast, though not one may be visible until the creature expires. But their presence didn't bother us. In fact, I think Harris rather enjoyed having an audience —even if it was an audience of Indians.

This time he had brought along several new pieces of apparatus, as well as a sort of chart or map punctured with perforations—something like the music-rolls of a player-piano —which he inserted in one of the machines.

In reply to my question in regard to it he gave some involved technical explanation which I cannot recall, but I gathered the thing was some sort of device to synchronize the apparatus with the movements of the earth and Eros. Also he had brought a new supply of the chemicals with which to charge the ray machine, and he expatiated on the fact that they were synthetic compounds, which he was testing for the first time and that as they were much purer than the natural ores, he hoped for better results.

Possibly it was due to these compounds, or for all I know to some other alterations or improvements he had made in his apparatus, but whatever the cause, the fumes appeared much more dense than usual as the ray began cutting into the rock, and instead of the pale-green, translucent tint—like the color of breaking wavecrests, the vapor had a decidedly bluish tint.

Harris waited until two fifty-three before he turned on the ray, and almost instantly we saw indications of the approaching vision. As before, a glow appeared as if a light was struggling to shine through the veil of fumes; it increased until a luminous ball seemed embedded in the vapor and for an instant I almost expected to see a glowing sphere emerge. I heard Harris utter a short, sharp exclamation, but before I could question him, the illuminated area expanded until it covered a vast area of the fumes; then once again, the swirling, gyrating masses of prismatic colors flashed and scintillated, until suddenly they rushed together, took definite form and before us appeared the picture, distinct and clear.

Once more we were gazing at Huaro-Yana in its heydey. Once again we saw the familiar surroundings, the familiar buildings, but now the inhabitants swarmed everywhere. They rushed about, ran hither and thither, seemed excited, and at times terrified. Then I noticed that the men bore arms—bows and arrows, spears, slings, stone and bronze-headed maces and battle-axes—and suddenly I realized that they were preparing for a battle. Gradually women and frightened children sought refuge within the temple and the other buildings. The men, obeying shouted orders—yes we could almost hear the voices so realistic was the scene—gathered in columns and groups.

The warriors upon the summit of the great arch took their posts and drew up the rope-ladders, and from the palace came a cortège at whose head strode one who I instantly knew must be their monarch. Never will I forget his face. A splendid-looking man, a man every inch a

king; erect, haughty, with keen, hawk-like features, a broad serene brow, strong high-bridged nose and firm thin lips. Upon his head rested a casque of burnished gold set off by three scarlet and black plumes. Golden bands gleamed upon arms and legs; against the deep blue garments that he wore gleamed a burnished breastplate. In one hand he carried an immense, bronze-headed, battle-axe and in the other a round wooden shield, gorgeous with mosaic work. The nobles who surrounded him were almost as richly clad and were splendidly armed, but he towered above them for inches, and beside him they appeared almost puny, insignificant.

Instantly, as their king appeared, a mighty shout evidently arose from the assembled warriors, and even in that tense, thrilling moment when, with bated breath I stood gazing enthralled at the vision before me, it flashed across my brain that the strangest, most incredible feature of it all was that no audible sounds came to my ears. I could see the men's mouths open, could see them raise high their weapons and clash spearshafts and bows on shields in salutation to their monarch, yet all was silent, so silent that the whirring of the motors in the machines beside me seemed a roar.

Quickly the king stepped down from his palace and with a vivid gesture towards the west, led his warriors toward the great black arch. So intent had I been in watching the monarch and his nobles, that I had given no heed to what was taking place elsewhere. But now, as I turned my eyes towards the Huaro-Yana, I gasped, my heart seemed to skip a beat, and I felt as excited—yes, and as terrified—as though I had been actually upon the scene in person. Outlined by the black arch, moving steadily, inexorably nearer, were dark masses which I took at first to be close-packed hordes of men. Down upon them the garrison upon the arch hurled a perfect rain of arrows, javelins and stones, yet the hail of projectiles seemed to make no impression upon the enemy. Then, to my amazement and horror, I saw that the dark bulks were not mobs of savages as I had thought; they were gigantic beasts, monstrous creatures of some sort. The next moment they were blotted from sight by the onrushing army of warriors led by their gold-helmeted king. I saw axes and maces flash. I saw arrows speed. For an instant the arch itself was almost hidden by the struggling, fighting mob. I leaned forward, my breath came hard and fast, I strained my eyes to see what was taking place, how it fared with the monarch and his men.

But even as I gazed, for the moment forgetting it was but a vision, a scene by some miracle snatched from the distant past, a haze seemed to cover the view, the struggling warriors, the black arch, the distant mountains grew dim, indistinct, and the next instant the scene had vanished. And then suddenly, as though flashed upon the bluish vapor by some gigantic magic-lantern, there appeared a totally different scene. A scene so weird, bizarre, so utterly unlike anything I had ever seen or dreamed of seeing, that I started back with a low, involuntary

cry. Before the sounds had fairly left my lips, the scene had vanished, the fumes billowed and rolled down the cliff. With a deep indrawn breath I turned toward Harris. He was standing, gazing transfixed, as if hypnotized, at the spot where the scene had been. Slowly, almost as if just awakening from a dream he turned.

"Did you see it!" he almost gasped. "Did you see that last, that—that bit of Eros?"

I gazed at him in amazement. "Eros!" I exclaimed, "What on earth do you mean?"

"Didn't you see it?" he repeated, with something of awe, almost of reverence in his tones. "Don't you understand? That last view—that fleeting scene was a bit of Eros. Think of it! We are the only human beings ever to have looked upon the surface of a planetoid!"

"What makes you think it *was* Eros?" I asked, although more than half-convinced he was right. "How do you know it was not some part of this earth?"

"How do I know!" he cried. "Is there any such place on earth? Is there any such scene? Are there any such forms of vegetation—such creatures?"

I had to admit I knew of none, still I could not believe Harris's assertion possible. "No," I replied, "not at present; but how do we know it was not a view of the earth—perhaps this very spot—in some past age, in prehistoric times?"

Harris snorted. "You, an archeologist, ask that!" he sneered. "Was there ever a time in the history of the world when there were such forms of growth? You know there was not. No, no, we were looking upon a scene in Eros. I——"

A wailing groan from the Indians startled us, caused us to turn, and our eyes fell upon the dyke, we stood transfixed, gazing speechless at what we saw. Harris in his excitement had not shut off the ray. Great masses of blue vapor covered the rocky wall, and once more upon the surface a picture had appeared. A scene terrible in its tragedy, in its desolation, the culmination of the battle whose beginning we had seen. Against a lurid sunset sky the Huaro-Yana loomed black and ominous, the palace, the temple, every building was silhouetted against the glowing sky, but not a living human being was in sight. Everywhere, strewn upon the ground, were weapons, accoutrements, garments, ornaments, missiles. With a shudder I saw in the foreground a mangled mutilated corpse, whose distorted features I recognized as those of the king, who, such a short time before, had led his shouting warriors to battle.

The horror of the scene was magnified by the fact that no triumphant enemy was in sight, that no man or woman, no living creature moved through that city of death. It was as if every living being had been utterly wiped out completely disintegrated by some stupendous cataclysm, leaving only the twisted body of the dead monarch in the shadow of his deserted desolated palace. And yet —I stared, I strained my eyes in a vain effort to pierce the ever-increasing dusk that was settling over the scene as the sunset faded from the sky. Something had moved, some-

thing vague shapeless, phantasmal, a form yet formless; a cloud-like wraith; an intangible, ghost-like thing that caused cold chills to run up and down my spine, as for an instant it hovered—no, drifted is a better term—into the shadows of the palace and passed on and vanished in the darkness. Then a cry of horror came from my lips, for where, but an instant before the dead king had been stretched upon the ground, now only his golden helmet, his bronze breastplate and his shield remained! The next instant the last blow faded from the sky, darkness blotted the scene from sight, and the pale-blue vapors once more drifted and rolled across the face of the rocky wall.

"My God!" gasped Harris, as he turned, white-faced towards me. "Wasn't it ghastly?"

I bowed my head. "Horrible!" I managed to say. "The extermination of a race—the end of the pre-Incans. But the mystery is as great as ever, Harris. Who, what——"

A hoarse, dry, almost hysterical laugh came from his lips. "The old legend," he said, "the giants from the sky'! Did—" he shuddered and cast a furtive, half-frightened glance at the dyke—"did you see that, that *thing*? That—" he lowered his voice to a whisper—"that ghastly, spectral thing that, that devoured the dead king?"

With a tremendous effort I pulled myself together I grasped Harris's arm and shook him "Nonsense!" I cried. "Snap out of it, Harris! The tragedy of the scene has got on our nerves. It was only a picture—a vision—a bit out of the past. We're acting as if it were real. Giants! Piffle! We merely missed the actual fight—the battle—and saw the place after the victors had cleared out. Probably savages from the *montana*. And as for the cloud—the fading light merely distorted a wisp of fog or smoke. Come on, it's getting late, let's get out of here and go home."

For a moment Harris stared at me with a strange expression in his deep-set eyes. Then he burst into a peal of laughter. "Yes," he cried, "I guess you're right! We're a couple of damned fools. But—" there was a note of triumph, of elation in his voice—"I told you I'd keep the scenes going, and I did. Do you know how long that first one remained? Over half an hour! And I brought the last one in after four o'clock! I've conquered the time element. I'll get them whenever I wish now, and I'll keep them as long as I please. And we'll see Eros next time. We'll explore it, study its vegetation, watch its inhabitants."

But my mind was too much filled with the tragedy of Huaro-Yana for me to answer him.

Chapter X
A Vision Materializes

If only Harris had been satisfied with what he had accomplished. If only he had been content to have revisualized the past of Huaro-Yana without attempting to penetrate the mysteries of another planet! Yet I cannot blame him. He had accomplished something that seemed almost superhuman. He had opened a new vista to science. No living man

could have resisted the temptation, the desire to go farther, once he had peeped within the portals of the unknown. And no one could have foreseen the dangers, the perils, the horrors that lay within those portals.

And I must confess that I was equally to blame, equally responsible for what took place, for the thing had gripped me, too. I was as fascinated by the posibilities of Harris's discovery and amazing accomplishments as was he, and neither of us could possibly have foreseen the results that were destined to follow.

Perhaps, too, it was all for the best. If he had not done it, sooner or later some other scientist would, and perhaps it was fortunate for the human race that he was the chosen instrument of Fate, that it happened in that remote, almost uninhabited spot instead of in some populous, densely inhabited district, for I tremble to think of what the results, under such conditions, would have been. And now that there are not (as far as known) any of the essential minerals remaining on earth, and as all of Harris's formulae and apparatus, as well as his synthetic chemicals, are utterly destroyed, there is little fear of the world being jeopardized by a repetition of the incredible occurence.

Such thoughts, such speculations, invariably fill my mind whenever I allow myself to recall the events that followed so closely upon that last vision which showed us the destruction of the pre-Incans, who dwelt in the city by the Huaro-Yana. Yet in a way, I realize that all such thoughts and speculations are idle and lead nowhere, for, as Harris was so fond of pointing out to me the slightest alteration in any factor—no matter how trivial it may appear —will alter the entire course of events, and for all we know to the contrary, the entire universe.

"The biggest word ever uttered by human beings is the word 'IF,'" he used to say. "Don't ever forget that. That's one reason I'm a fatalist, my friend. In order not to have done a thing the entire course of events for immeasurable eras of the past would have had to have been different. In order to influence the present or the future, we would necessarily have to influence the past. Just as any alteration in the present would influence the future until the very end of time, so it would have to influence the past back to the very beginning of time. As long as it manifestly is impossible for us to alter the past, so it must be impossible to alter the future that is dependent upon the past."

But I forget myself. Here I am quoting Harris's arguments, when I should be recording the events as they transpired, and if poor Harris were alive today, he would be the very first to find fault with me.

Naturally, after that amazing experience of having seen three distinct pictures (I will insist on using that term, for regardless of what they may be scientifically called, to me they *were* pictures) we could think of nothing else, and throughout the rest of the afternoon and evening, and far into the night, we discussed them, argued over them, marveled at them, and wondered what revelation would be vouchsafed to us next.

Yet there were many points on which we did not agree. For example, Harris insisted that the indistinct froms that I have already described as gigantic beasts or monsters, which we saw approaching the pre-Incan warriors beyond the arch in the first vision, were identical with the wraith-like, misty thing we had both seen in the final vision. I could not agree with him.

"Well, what was it then?" he demanded. "The damnable thing did away with the dead king, so it wasn't any phantom. I never yet heard of a ghost that could cause any changes in material things."

"Who said anything about ghosts!" I snapped. "In my opinion it was a huge bird—perhaps some giant vulture—and that it simply picked up the body and flew off with it."

Harris sneered. "Is that so?" he cried. "And what sort of a bird can pick up and carry a full-sized man?"

"Not any that exists today," I retorted, "but we don't know how long ago those events occurred and so we can't say positively that gigantic birds or, more probably pterodactyls, may not have existed at that time. A fair-sized pterodactyl could easily carry off a man. And if there were a lot of them—if they were as common then as buzzards are today—it would explain why no other bodies were visible. If you can suggest a better theory, let's hear it."

"Hmm, I hadn't thought of that," he admitted. "Perhaps you're right. But even so, the old fable wasn't so far off—pterodactyls would be 'giants from the sky' all right."

It was my turn to scoff. "Still harping on that old myth; eh?" I said. "Well, have it your own way. I admit that the legend of a king having called on the Sun-God to aid him in cutting the rocks may have had its origin in the use of the ray. But you can be dead sure that if there were carrion-eating pterodactyls about, the people would never have called them 'giants from the sky,' any more than these Indians today would regard condors as supernatural things. And whatever, or whoever the enemies were who defeated the inhabitants of Huaro-Yana, they certainly were *not* from the sky—they came marching in on the ground under the black arch."

So, quite as if we had been on the scene, we argued on the details of the tragedy, exactly as any two independent observers will argue on the details of a scene they have witnessed.

It was not until three days later that Harris was ready to make his attempt to visualize a portion of the surface of Eros. There were a number of changes and improvements to be made in his instruments and he had to prepare a new supply of the synthetic minerals that produced the ray. But at last all was in readiness, and once more we climbed to the platform, and once more the crowd of Indians gathered to witness the white man's magic pictures.

I don't know exactly what alterations Harris had made in his devices. In fact I knew nothing, technical, in regard to them. I am no chemist, no electrician and I know nothing of the complicated, involved and, to me, abstract principles and laws by which Harris worked. A

lifetime of study would have been necessary to have mastered even a fraction of Harris' knowledge of such matters and while I could understand, in a way, the principle of the ray-making mechanism and could grasp the mechanical operations of some of his instruments, their particular purposes and principles were all a closed book to me. As he worked, adjusting and arranging the various things, he kept up a running fire of explanations, most of it worse than Greek to me.

At last all was ready. Harris adjusted the valves, he started the nozzle moving and set his camera in motion. Then he moved various levers and switches on the other instruments and started the device that contained the perforated sheet or chart I have already mentioned.

Almost instantly the entire top of the dyke began to vanish, to dissolve, and dense, billowing clouds of the fumes poured down over the face of the rock. Presently, as before, a light glowed in the vapor; it increased until a fiery globe seemed about to burst through, and then slowly it died out, receded, vanished. An impatient ejaculation came from Harris.

"That light—that sphere you saw —that we've always seen—is Eros!" he declared, as he readjusted his instruments. "I've proved that—I'll show you later but—confound the thing—Ah!"

I uttered an involuntary cry myself. Covering the entire curtain of vapor that now completely concealed the dyke, was a scene so marvelous that for a moment I could not overcome the conviction that the dyke had been miraculously destroyed and that I was gazing upon the landscape that had been hidden behind it. I saw a flat, sightly undulating surface—with indescribably rough, jagged and weirdly eroded mountains in the distance. Something about the land, I don't know exactly what, gave it the appearance of a marsh or swamp, and everywhere it was covered with the same grotesque, bizarre and impossible forms of vegetation we had seen in that former fleeting glimpse I have described. I have said that in speaking of it to Harris I compared it to a painting made by a futurist or a lunatic. But such a comparison is wholly inadequate, to say the least.

No futurist or modernist artist, no lunatic could have conceived such a wholly impossible, topsy-turvy landscape. Not until I had gazed at it for minutes did I realize just what was wrong with it. Then suddenly it dawned upon me that what I had taken for mountains and immense rock masses were vegetable growths; rough, bare, leafless trunks and knobby growths; that what I had at first glance mistaken for spreading shade trees and graceful palms were immensely magnified and exaggerated mosses; that the seeming forests were growths of lichens; that the areas of rough, irregular marshy ground were vast expanses of slimy, gelatinous moulds, and that the low-growing, brushy jungles were composed of dwarfed, pygmy trees. Among them I saw conifers, palms, cicads; trees that had the appearance of oaks and beeches. Everything was reversed. The forms of plant life that are smallest, most insignificant on earth were enlarged to the dimensions of

our tallest trees, while the forms that are largest and most impressive on earth were here reduced to tiny shrubs and weeds. And such colors such forms! I am no botanist. I had never studied the lowest froms of plant life through a microscope. No doubt if I had done so I would have been prepared for the strangeness of that scene before me and I might even have identified some of the families, genera or even the species represented. But as it was, it held me dumbfounded, fascinated with its impossible-looking absurdities. Out of thick, furry masses of silver-gray sprang square stalks bearing crowns of vivid scarlet that seemed so hard, so angular that they might have been cut from blocks of wood. From undulating, crinkled, pancake like sheets of sickly white, rose thin, hair-like filaments that supported inverted cones of burnished copper and gold. Mottled, reptilean-looking, contorted vines thrust out feather-dusters of intense blue. Fuzzy-green stalks grew in dense groves, and topping each were a dozen discs of purple.

There were bare, straight poles covered with immense recurved hooks. There were plants that palpitated and seemed actually to breathe. There were growths that—ever and again as we watched them —exploded and shot clouds of golden smoke across the weird landscape, and there were others with long cable-like tentacles that coiled and uncoiled and felt about and seized anything within reach as if a giant octopus lay hidden in the foliage.

Strangest of all, perhaps, were globular things that looked like titantic oranges and immense, leathery, gaudily colored plants that looked like giant starfishes, so symmetrical were their five-pointed rays.

As my eyes gradually accustomed themselves to the strange scene and I sensed the proportions of things, I realized that the hard, rough, leafless growths that I had at first taken for rocks and mountains were—fungi! Yes, there was no doubt of it. They were titanic, immense, collasal fungus growths, weirdly shaped, dull-red, pink, orange, flesh-colored, black, brown—almost exact counterparts of the fungi we see in northern swamps and woodlands, but here, here in this crazy, impossible landscape, out of all proportions; so huge in comparison to the other vegetation that they loomed like hills peaks against the sky. Hardly had this amazing truth dawned upon me when I saw life. Flitting from one clump of giant mosses to another was a flock of what I took at first to be birds. But as they alighted upon the cubistic, pentagonal branches and folded their gaudy wings, I fairly gasped for they were insects! Moths, soft-winged, thick-bodied, six-legged moths. Moths as large in proportion to their surroundings as parrots or toucans in an ordinary forest. Then I saw tiny winged creatures—flies, bees, I thought, until an instant later one of the little creatures swept buzzing into the foreground and, coming to rest upon a lichen, revealed itself as a bird!

It was then that I first saw the rhino (I say rhino for it was nearer that than any other earth creature, though perhaps more like an Iguanadon) as it came charging, head

down, horns lowered, out of the jungle of dwarf pine trees. So plain, so clear, so real it seemed, that I could almost hear the crackling of branches, as it tore through the thick growth, could almost hear the thud of its feet, as it charged madly at—Was I taking leave of my senses? The beast was charging at a caterpillar! Yes, at a woolly caterpillar half as big as itself that, panic-stricken, was striving madly to climb up a mould-stem to safety!

And there was something so inexpressibly ludicrous about that pgymy rhino charging that giant, lumbering, panic-stricken caterpillar that I burst into a guffaw of laughter. But the sounds died on my lips, my merriment changed to amazement and I stared in uncomprehending wonder. From the dark shadows of a forest of pale-gray mosses something emerged. A great, grayish, repulsive-looking thing; a thing that sweated, exuded thick, viscous slime. A thing that seemed to glide rather than walk, yet moved with incredible quickness. Scarcely had it appeared before it had swept across my vision and once more had vanished in the gray forest. A glistening, slimy trail marked its passage, but the charging rhino, the woolly caterpillar had vanished completely, destroyed, swallowed up by the monster!

A sharp cry from Harris broke the spell. "My God!" he gasped. "Look! They're real! Those birds!"

Chapter XI
History Repeats Itself

My first wonder, the first shock of seeing them take life and wing was increased if such a thing was possible—when I saw them increasing in size with incredible speed. A moment before they had been tiny things—scarcely larger than hummingbirds—perching upon a tiny twig; but now they were as large as pigeons. A moment more and they had become the size of crows! An instant later they were as large as macaws! And now they flew heavily, clumsily, with wearily beating wings, back and forth, uttering strange, terrified cries until having grown to the size of geese, they dropped to earth, and after a few feeble efforts to rise, sank exhausted and panting upon the ground.

The next instant, Harris, with a sharp cry, spring up, leaped from the platform and dashed forward towards the strange birds, creatures from another planet. They fluttered and flopped as he approached, but were too utterly spent to escape, and I saw him stoop and seize one of them with a triumphant cry. It was at this instant that I again turned my gaze upon the picture and the blood seemed to freeze in my veins at what I saw; my heart seemed to cease beating: I was paralyzed with terror.

Rushing from the vividly realistic forest of giant mosses, straight towards the foreground, came a herd (there is no other word to express it) of those monstrous, gray, slimy things I had seen destroy the charging rhino. But the horror of it, the paralyzing feature of what I saw was that the foremost of the things had left the picture and was rushing directly upon Harris, who, back to the dyke and intent on examin-

ing his capture, was utterly oblivious of his peril!

Never, not even in the most terrible nightmares, have I ever felt such numbing, helpless terror, and never until my dying day, do I want to experience such horror again. Even now I shudder and feel faint as I recall it, for coupled with the mad fever I had for Harris' life, was the horror of the thing itself, the loathing I felt for the monstrous shape, and the deathly fear that is always inspired by the uncanny, the unknown, the supernatural.

I tried to shout a warning to Harris, but my tongue refused to utter a sound. I strove to rise to my feet, to dash to Harris' side, but my limbs, my muscles seemed frozen into rigidity. Only my eyes seemed able to function; even my brain seemed numbed, dazed, as if hypnotized by the unthinkable sight before me.

Then the Indians did what I was powerless to do. Not a sound had escaped them up to now. They had been too awed, too terrified, too utterly overwhelmed to move, to even groan or sigh. But now, as they saw that horrible, terrible thing bearing down upon Harris, a hoarse shriek of mingled warning and dread burst from them and startled Harris into activity. Not knowing what their screams meant, yet sensing peril, he swung about to see—God, how I shudder to think what terror must have been his!—to see that vast, awful thing within a dozen rods of where he stood! No—not thing, but things, for by this time five of the monsters had leaped from the visionary scene and were sweeping across the ground.

Vast! Yes, bulky as mammoths, for like the birds, they had grown, swollen, increased in size, as they sprang from images into life, like balloons being inflated with air. How can I describe them? How can I convey to my readers an adequate idea of their appearance? They were shapes, yet shapeless; forms, yet formless. We can describe a cube, an ellipsoid, a cone. We can say a thing is elephantine, that it resembles a bird, a reptile, a cat, a human being or an insect. But how picture, how visualize by words something utterly unlike anything we have ever seen, something whose form constantly, ceaselessly changes? Can we describe the form of a drifting cloud, of a wisp of smoke? And these things, these monstrous, awful, supernatural things that had come swarming from out of that pictured scene were as vague, as indescribable, as constantly altering in form as clouds or vapor. Yet they were solid, massive, dense, endowed with sentient life!

They had neither bodies, heads, legs nor appendages of any sort, yet they seemed to possess all. They drifted, slid, rather than walked or ran—like gigantic slugs or more perhaps like masses of thick smoke—along the ground. They seemed endowed with intelligence, with purpose, for they hesitated, they gave the impression of peering about, of listening, and then they moved on as if with a definite goal in view. And—the horror of it causes cold chills along my spine even as I think of it now—from time to time, long, writhing, tenuous portions of their masses shot out from

their bulks like—like, yes, like nothing so much as the viscous strings that may be drawn out from a mass of glue. Once I saw one of these sticky, adhesive, tentacle-like things touch one of the fallen birds and draw it into the mass itself where it was instantly absorbed, swallowed, like a stone dropped into a pool of tar.

All this I sensed rather than saw, for my gaze was riveted upon Harris who, having seen what was behind him, dropped the bird he had seized and whipping out his heavy revolver, which he invariably carried and which had been the cause of endless raillery on my part, fired six shots in rapid succession into the formless, lurching bulk of the monstrous thing.

Even in that horrible tense moment, utterly unable to move or to utter a sound, I crouched there upon the platform. I realized how incongruous it seemed for Harris to be firing a revolver, a man-made weapon, at a thing not of this earth. And I knew instinctively that his soft-nosed bullets would have no more effect upon the nightmarish shape than upon a mass of drifting fog. Harris also must have realized this, and looking back upon it, I feel sure that his action was wholly involuntary, the automatic reaction upon facing an advancing enemy. Yet for a brief instant the thing hesitated, it swerved, it seemed to writhe; its shapeless bulk heaved and altered in form—I can compare the effect only to the contortions of a wounded animal tied in a sack—and the slimy viscid excretion upon its surface fairly sweated. No sound issued from it—the silence of the things was one of their most terrible features and the next second it was again in motion.

But the momentary respite had enabled Harris to dash away. A long, wavering, gelatinous-looking, sticky streamer shot forth from the thing and I held my breath, thinking it would capture Harris in its glutinous grasp. But it missed him by the fraction of an inch. The next moment he was close to the platform and to my dying day I shall be haunted by the unspeakable terror, the expression of knowledge of certain death, that was on his face as he looked up at me. But he did not shout, did not speak, and I realize now that he feared to do so, that he dared not call to me or attempt to climb to my side, for dread of drawing the attention of the monsters to my presence.

The next second he had passed below the platform and, dashing into the midst of the assembled Indians—who sat immovable, unable apparently to rise and flee of their own accord—he struck them, kicked them, shouted to them, cursed them. Physical pain, fear of the maniacal white man roused them from their lethargy, from the trance into which they had fallen in their fatalistic awaiting of death. Howling with fear, groaning from his blows and kicks, they scrambled aside, sprang to their feet and scattering, raced off towards their homes.

Only half-consciously I had seen this, for my mind, my gaze, were still centered upon those awful shapes, those intangible, living, fearsome monsters that now—at

least a dozen in number—swarmed over the plain.

Before my horrified eyes I had seen them creep—no, drift, or roll, is better—over the spots where the llamas had been. And each time the frightened animals had vanished completely, had been absorbed like bits of twigs in a rolling snowball. One after the other the llamas had been swallowed up, and in hunting down this prey, the things had been delayed and many of the Indians had had a chance to escape. A chance, I say; but, losing their heads in the stark terror of the catastrophe, many stumbled and fell, many ran in circles, screaming at the top of their lungs, and others turned and ran directly into the paths of the approaching, monstrous forms. I felt nauseated, sick ready to faint as I watched these wretches overtaken, swept down by those silent, slime-coated formless things that passed inexorably on, leaving nothing but broad trails of slime, where a moment before, had been living, terrified men and women.

It was then, for the first time, that across my benumbed mind flashed memory of the ancient legend, recollection of that fearful scene of desolation of the pre-Incan city. Giants from the sky! These things, these awful beings were the "giants"! These were the enemies that had swept the pre-Incans from the earth! It was one of these things, these living shapes, that had passed over the dead king in the dim twilight of that vision we had seen! It was all clear to me now. Somehow, by some means, perhaps, probably by that same damnable Inti-ray, by which they cut their stones, the pre-Incans, too, had brought these monstrous things from Eros or another planet.

They had been wiped from existence by them, by these "giants from the skies." But what had become of the things once they had established themselves on earth? How, why had they, too, vanished? Why had they not increased, spread until they had utterly wiped humanity from the face of the earth? Such thoughts, such questions drummed and thrummed in the back of my brain, even while I watched and stood transfixed, as the things moved about, annihilating the few remaining Indians.

Suddenly Harris' voice aroused me as if from a horrible dream. I peered down. He was racing madly about, dodging, striving to evade two of the now gigantic things that had centered their attentions upon him.

"The ray!" he shouted, as he dashed beneath the platform. "Turn it off! Stop them! They'll destroy the world! I——"

His words were lost, as with a prodigious leap he sprang aside just in time to avoid the clutch of a waving, outflung tentacle. The next second he was dashing at topmost speed towards the distant buildings, and to my immense relief I saw that in that direction there were few of the things—that he might yet escape them.

For a fraction of a second I crouched there transfixed, still unable to move. Then, as one of the vast, glutinous things rose, billowed, swelled

upwards towards the platform. I was galvanized into life and action. Harris' last words still rang in my ears. I understood. I sprang to the machine from which the invisible ray still played upon the cliff.

With shaking, trembling hands I seized the valves. I was about to turn them when before me one of those impossible monsters reared itself to the level of the platform where I stood.

I uttered a wild maniacal scream. I grasped at the cylinder for support, my hands clutched at the nozzle, and as I reeled back it swung downwards and to one side.

Instantly, as though it had been a gigantic baloon that had been pricked, the monstrous, slime-coated form collapsed and vanished before my eyes!

For a brief instant I gazed uncomprehending, utterly bereft of reason, unable to grasp what had happened, what had caused the destruction of the thing.

Then suddenly, like a flash of light, like an inspiration, I knew. It was the ray!

Within my grasp I held the power to slay, to destroy, to annihilate the awful, irresistible monsters from another sphere. Yelling like a madman, shouting, laughing like a maniac, I grasped the nozzle, and sighting along its barrel, aimed it at another of the horrible things. The result was magical. There was a puff of vapor—I could think of nothing so much as the effect when one steps on a puff-ball—a faint pop, and where the gigantic, repulsive thing had been there was—nothing!

As though I were handling a machine-gune I swung the nozzle to right, to left, up and down, picking off one of the things after another. Each time as that terrible, invisible ray fell, it was as if it had been struck by a sixteen-inch shell. Never was ther such hunting! Never such gunnery!

I danced, I shouted, I chortled with glee, with the pure joy of destruction. I was fighting unearthly supernatural beings with an unearthly, supernatural weapon.

I felt a strange exaltation, as if I were a superior being, almost as if I were a spirit battling with conquering evil spirits. I was drunk with my power, my invincibility.

The power of that ray was inconceivable. No matter how far distant the monsters might be, it picked them out, exploded them, disintegrated them. Some were already far across the plain, traveling rapidly towards the buildings, following after Harris, who was nowhere to be seen, who, I felt sure, had reached the shelter of the house or the laboratory in safety. Every monster had been wiped from existence in the neighborhood of the platform. Several that had been about to pass through the arch, had been overtaken by the ray and destroyed. Only the three that were rapidly receding towards the buildings remained. For a moment I hesitated, fearing that if I turned the ray upon them I might inadvertently injure Harris, who had fled that way. Then I remembered his statement that the ray was harmless to organic matter, that he could stand before it without injury. I waited no longer.

Carefully I swung the nozzle,

aimed it at the lurching, undulating, gray forms looming vast against the buildings beyond.

A volcano seemed to burst into eruption. The world seemed to thunder and crash about my ears. I had a faint, a fleeting vision of lurid flames, of a rending, thundering detonation that seemed to rock the earth—and then: oblivion.

The sun was sinking when I came to my senses. The world was bathed in a lurid glow, and for an instant I thought a terrific conflagration was near at hand. I groaned with agony as I tried to rise. I felt bruised, as sore as though I had been pounding with giant hammers. My head was splitting. With an effort I moved my arms; they at least were whole; I felt my head gingerly but could find no fracture; nothing more serious than a deep scalp wound. Little by little I moved my legs. I thanked God there were no bnes broken. And though I suffered excruciating pain in so doing, I gritted my teeth, and, rising to a sitting posture, gazed about.

I was surrounded by wreckage, by splintered timbers, by the remains of instruments and apparatus that I recognized as the devices Harris had installed upon the platform, the platform that had collapsed with me upon it.

Sudden memory flashed back to me. What had happened? What had caused that terrific explosion? I managed to turn my head. Where the great dyke had stood was a mass of tumbled, jumbled blocks of stones, blocks with their edges clean-cut by the ray. Only two rough, jagged, columnar fragments of the dyke remained standing. Everything else, all the centre, weakened by the continual cutting, had fallen by the concussion of that terrific blast.

Groaning, raising myself inch by inch, I rose to my feet. I stared about. The great black arch, the Hauro-Yana, had been riven, and a great gap showed in its centre. Not a living thing was visible upon the plain, but across it, gleaming, shimmering in the light of the sinking sun, were the slime-trails left by those awful monsters from another planet. A cold shiver swept over me at sight of the paths of hardening slime, at memory of the horrible things, at recollection of their destruction. Where, I wondered, was Harris? He must have witnessed the annihilation of the things. Why had he not come to my assistance?

I shouted his name as loudly as I could, but there was no answer.

Slowly, painfully, helping myself with a stick, I picked myself up amid the wreckage of the platform; I toiled step by step, dragging one foot after the other, towards the buildings. But before I had gone fifty paces I stopped, stared, rubbed my eyes, aghast. Not a building was in sight, not a tree rose against the lurid sky where Harris' house and gardens had stood!

Forgetting my aches and pains, filled with terror of what it might presage, I hurried forward. My worst fears were fulfilled. Only heaps of shattered masonry and wreckage were to be seen where Harris' house, workshop and laboratory had been. And where the latter had stood was a great pit, a miniature crater in the earth.

Slowly realization came to me

as, overcome, utterly spent, filled with numbing sorrow, I sat there amid the ruins while twilight fell over the scene of desolation. The laboratory had been full of chemicals. Harris had great quantities of the synthetic ray-making materials on hand. The ray, aimed at the distant monsters rushing towards the buildings, had reached beyond them, had fallen upon the laboratory and had exploded the chemicals stored there. It was all clear now, all plain.

But realization had come too late. Bitterly I blamed myself. For a space I contemplated ending my mental tortues by my own hand. I had been the means of Harris' death. By accident I had destroyed him, while I was striving to save the world from the monsters of the ray.

There was but one consolation, one chance that I was not, technically, a murderer. There was a possibility, a remote chance, that the explosion had not killed Harris, that before it had taken place he had been overtaken by the things and had been killed, devoured by them. But that thought was, if anything, more terrible, more horrible than the thought that I had killed him. No, no, no! I cried to myself and to the silent night. Not that! Better a thousand times that he found death in the explosion of his laboratory, than that I killed him with my own hands!

The uncertainty was terrible. How I lived through that night with my mind tortured and racked with doubts, fears, self-reproaches and heart-breaking sorrow, I shall never know. But all things have an end and at last day dawned over that scene of death and desolation. And as I glanced about and the very place seemed dead, I remembered that other scene, when only the body of the pre-Incan king remained in the desolated city and I felt that history was repeating itself at Hauro-Yana.

Why I remained there, I do not know.

As day spread over the mesa and the sunlight streamed over the Andean summits, once more I rose and aimlessly, with no conscious purpose in view, I began to wander about, to search amid the ruins and the devastation for some trace of Harris, some proof that he had not met that other and more horrible fate.

Yet I could find nothing, no bruised and mangled flesh, no fragments of anything human. At last, utterly spent, realizing that I could do no more and faint for want of food and sleep, I turned my weary feet towards the Indian village.

Less than a quarter of a mile from where I had spent the night, I came upon him. So natural, so peaceful he seemed, that at first I thought him asleep. His face was calm, composed, and a smile was upon his lips. But as I stooped, hoping against hope that he was alive, full realization of what had happened came to me.

Still clutched in his hand was his revolver, and in his right temple was the round blue mark ringed with dry blood, where the fatal bullet had entered his brain. Harris had taken his own life, and glancing up I knew the reason why. Within a score of paces from where the body

lay there was a heap of slimy matter. Beyond it stretched the glistening, varnish-like pathway made by one of the monsters of the ray. Harris had realized he could not escape, he knew—he must have known —that if I destroyed the thing with the ray the explosion would follow. Death was certain in either case, and rather than be devoured, absorbed by that loathsome, awful thing, or be blown to atoms—perhaps mangled and not killed outright by the explosion—he had taken the quicker, more merciful way.

I was still bending over him, tears streaming down my cheeks, when a sound caused me to turn, and I saw two Indians standing beside me.

Of all their people they alone survived. Their presence was like a gift, a blessing from heaven to me. Their companionship saved me from insanity I am sure, and never, without them, could I have escaped from Huara-Yana.

There is little more to be told. With the Indians' help I gave Harris proper and—so I trust—Christian burial. Then, having eaten and rested and in a measure recovered the use of my muscles, we started on that long and terrible journey across the mountains from Huara-Yana to Tucin.

Days were occupied in that trip, but eventually we arrived at the little village and there, bidding farewell to the two men who had stood by me so faithfully, I secured mules and guides and in due time reached the railway and civilization.

Far back in the heart of Andes, amid the massive ruins of a long-past civilization, Frank Ogden Harris sleeps the eternal sleep. As far as the world knows he came to his death through an accident, the explosion of chemicals in his laboratory in Peru. Only two non-committal Indians and myself know the true story of his death and the astounding events that led up to it. If the Indians ever tell of it, their stories will be put down as fables, legends, myths. So, to all intents and purposes, only I, who was a witness of and a participant in those amazing occurrences, can reveal the facts as I have herein related them.

No doubt my my story, too, will be scoffed at, ridiculed, declared fiction or the ravings of an overwrought or injured brain, as hallucinations brought on by the explosion of Harris' laboratory.

But if those who scoff and doubt wish proofs, let them go to Tucin. Let them hunt up Chupi-Sara and Lucamo-Tesi, then let them journey over the Andean summits to Huara-Yana where they will find the ruins of the pre-Incan city, the shattered black arch of Huara-Yana, the débris of the great dyke, the splintered remnants of the platform and the broken instruments and perchance —for I know not if they remain— the great paths of sun-dried slime left by those unspeakable, horrible monsters of the ray.

The End

THE SECOND SWARM

J. SCHLOSSEL

Illustrated by FRANK R. PAUL

For sheer daring and power of imagination, The Second Swarm will remain for years to come, a great outstanding work in scientifiction.

An interplanetary story such as this has never before been imagined. It is true that other stories have carried us to other planets and even to other universes, but never before has any author pictured them with such daring and such depth of imagination as this.

We consider it one of the greatest interplanetary stories that has come along in years, and we know it will be accepted by you as such.

* This is the original blurb.

THE sun had just sunk behind the hills in the west along the Atlantic seaboard of North America when into the upper reaches of the Earth's atmosphere from the southeast not far from the spot in the horizon where presently Sirius in all of its splendor would rise, there suddenly shot a long, slender meteor-like object. It sped through the highly rarefied outermost stratum of air with such speed that it glowed red in an instant. It did not follow the usual path of a shooting star, but seemed to rise. Holding a course near the top of the ocean of air which must have been parallel with the curvature of the Earth, it sped northwest. Like a blood-red streak it was traveling across the darkening sky. From the spot in the heavens where the first had made its sudden appearance, five more meteor-like objects in a straight row, equally distanced from each other, plunged into our gaseous envelope, glowed red as blood, and followed the course of the first. Behind them came a row of five more, then five more. Steadily and silently they came into view, row after row. Their silent passage was ominous.

As if by a signal, a myriad ships of air of every conceivable shape and size shot up into the air from the surface of the water along the Atlantic shore, ready to leap into the air. Almost immediately they were joined by thousands from the land. Straight up they rose with astonishing swiftness. Mighty telescopes in huge observatories at various elevated points of the Earth had picked out and counted them—one hundred and one in all—and studied them as they drew near. Long before those meteor-like objects had be-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come visible to the naked eye. Their formation and their course marked them plainly for what they were. From the countless ships of air, as they rose to meet the strange visitors, there broke forth a roar of artillery which grew in volume and fury as their distance from the meteor-like objects lessened.

The many ships that had leapt up from the surface of both land and water were left behind before they had risen more than a few miles in the air. The meteor-like objects—mile-long interstellar ships—gradually slackening their speed, continued to hurtle in a northwesterly direction. The red glow that enveloped each as it shot into the highly rarefied upper stratum of air was fading as their speed dropped still further. But even yet mere earthly distances were being wiped out with amazing swiftness at the terrific velocity with which they were still traveling.

As these interstellar ships neared a large, densely populated city which was partially hidden from view by some heavy, low-flying clouds, pale-yellow beams made their appearance pointing upwards from the topmost pinnacles of its highest towers. The upward progress of those beams seemed to be visibly retarded by the air. A powerful sucking sound could be heard in the neighborhood of those high towers. Around each of the beams a miniature whirlwind was beginning to revolve slowly. The air became golden and hazy. The powerful sucking sound became a roar of rushing wind. The heart of the city around the towers seemed to be in the grip of a tornado. Of the heavy clouds only some tiny feathery specks remained. One by one the pale-yellow beams were shut off and the wind began to die down.

The interstellar ships were almost at the edge of the outskirts of the city now. The first, the one in the lead, shot across the heart of the city. Suddenly, from some of the lower towers, there darted heavenwards twin beams of curiously scintillating green rays. Those green rays seemed far from dangerous, yet they feared them and gave all large cities a wide berth after this.

As those mighty interstellar ships shot across the first series of mountain ranges, colossal guns thundered from below. Man's forces of destruction were being loosened in all their fury. From far in the northwest toward which the interstellar ships were heading, there began to rise thousands upon thousands, wave upon wave, of ships of air belching flame and metal, in a terrific effort to bar their progress as the interstellar ships drew near, but neither the ships of air nor their projectiles could reach the high altitude at which the others were traveling.

The twenty rows of interstellar ships with their leader far in front, paying little attention to the thousands of ships that were trying to stop them, passed swiftly on. The thousands of terrestrial ships turned in swift pursuit, but the interstellar ships were traveling too high and too fast for them. Though they were left behind, from every valley and plain the earthly ships rose in their thousands, with the guns roaring, and followed doggedly. There seemed to be no end of them. They rose

in tireless waves until they passed the fifty-fifth degree latitude north. Above that latitude they ceased to rise.

The gap between the first row of those ships of air and the last row of interstellar ships began to increase rapidly. The interstellar ships were now flying parallel with the Rocky Mountains. Suddenly mammoth pieces of artillery on the mountain plateaus and snow-covered peaks in their path began to thunder madly. Each mile over which they were passing was being contested fiercely, desperately, yet it had no visible effect upon the interstellar ships that had plunged into the Earth's atmosphere from out of the depths of space and followed their course against all opposition of man. In a way, man's efforts to stop them seemed like some futile attempts of hordes of tiny ants.

As the countless ships of air neared the forlorn wastes of the Arctic Circle, they began to wheel around and speed back. It appeared as if they dared go no further, as if the snow-covered wastes above the Arctic Circle were in alien hands.

The mighty interstellar ships, moving along at only a fraction of the velocity with which they had first entered the topmost layer of the atmosphere of Earth, continued on their course until they neared a region where many hundred interstellar ships patterned exactly after the hundred and one in the air, lay sunken in the snow in rows of ten.

Holding an even keel, the interstellar ships began to drop down from their great elevation until they were only one thousand feet above the surface, then slowly cruised along as if searching for a suitable place to land. A few miles from the shores of the Arctic Ocean a number of shallow depressions upon the ground came into view. They began to settle into them one by one.

As soon as they had eased themselves snugly down, long metal gangways were run out and men, heavily clad and with packs upon their backs and weapons in their hands, began to pour forth from each ship.

The men moved around their respective ships for a while, then formed themselves into orderly ranks and marched swiftly along the roads of snow to the square openings which led underground. They carried their large packs easily. Their bearing and the way they held their weapons bespoke long training. Yet they were all very young, hardly out of their 'teens.

Among them there rose a faint murmur of discontent. They were growing tired of these everlasting practice trips, and longed for some real action, something with real danger. They knew how to handle the ships perfectly now, and they hated this perpetual training that was making mere automatons of them all. Some who could see no reason for complaint, were saying they would soon get action, plenty of it, when the appointed day finally dawned. But meanwhile, it was exciting enough plunging out of the depths of space from far beyond the orbit of Neptune at a terrific velocity; circling the four dead moons of Uranus and dropping many tons of powerful explosives and deadly

gas-forming chemicals upon their barren surfaces as if attacking; veering sharply as they approached too close to the neighborhood of Saturn—that wondrous ringed planet with its family of moons—a miniature solar system in itself—and sending from each ship a stream of missiles containing explosives of an atomic nature at the tiny moonlets which composed the rings, causing them to disrupt their equilibrium and crash into each other; dodging the asteroids, fragments of an exploded planet which once had its orbit between that of Mars and mighty Jupiter, and which now occupied an entire region.

This was the year 12,000 of the New Era, the year preceding that which the inhabitants of Earth had been looking forward to for nearly a thousand years. At the beginning of the next year, the Second Great Expedition was to be launched into the infinity of space to pass beyond the orbit of Neptune. Even now everything was ready, only waiting the word to go. The men and women who were going were trained until they could be trained no more, the ships were built and ready. Supplies were now being stowed into those ships.

Sirius, the brightest star in the heavens viewed from the surface of the Earth, rose slowly in the east. Men and women began to point it out to each other as it rose above the horizon and nodded to each other as their lips framed the word—"Soon." Ever since it was ascertained—at a terrible cost to human life—that around that bright star there revolved a planet capable of sustaining life such as exists on Earth, man has gazed covetously up at it as he prepared for a certain day in the future—the second day of the coming year—when the forces of man would leave Earth in a mighty swarm to add yet another world to his slowly expanding domain.

When the Second Great Expedition was first planned, following the complete success of the first which had gone toward Alpha Centauri and now occupied two of the nineteen planets which revolved around that star, scouting expeditions were sent out to seven of the nearer stars to investigate. The nearer the star, of course, the greater the chances of success in the event that the selected planet was inhabited and the inhabitants resented the invasion of man.

Blue-white Vega toward which the solar system was hurtling at the rate of one million miles a day and the giant orange-hued Arcturus in the constellation of Bootes were believed to be just at the extreme limit. Then came white-hot Formalhaut in Piscis Australis at the distance of twenty-three light years from the solar system. Next in distance was Altair in Aquila at sixteen light years from Earth. Procyon in Canis Minor was accredited with the distance of twelve light years; Sirius in Canis Major at the distance of nine light years, and 61 Cygni, the sixth magnitude star in the constellation of Sygnus, at the distance of eight and a half light years are the three nearest of the seven.

A scouting expedition of two interstellar ships was considered enough to send to each of the seven

selected stars. Six interstellar ships capable of making a round trip to any distance up to thirty light years from the solar system were planned and built. A driving mechanism producing rays powerful enough to hurtle them along at two-thirds the speed of light through the utter void of space between the stars was installed in each of them. The three farthest stars of the seven was their destination. They left the Earth in the order of the distance they had to travel so that they would all return around the same period.

Two more interstellar ships were completed and twenty-one years later they left for Altair in the constellation of Aquila. Twelve years elapsed before the expedition for Procyon in Canis Minor was on its way. The expedition for Sirius started nine years later. The last of the seven scouting expeditions was toward 61 Cygni in Cygnus which started a year and a half later.

Each of the four scouting expeditions that had gone toward Arcturus, Vega, Formalhaut, and Altair had three separate complete crews who worked their ships in rotation. Each of the crews operated their ships for a period of years. While one of the crews worked the ship, the other two were sunk in a lethargic state which resembled suspended animation. The lethargic state was induced by drugs, and conserved life—held life in abeyance. The expeditions whose destinations had been toward Procyon, 61 Cygni, and Sirius had but two sets of complete crews each.

The first of the scouts to return were the two ships that had gone toward 61 Cygni in Cygnus. Their report was that only one tiny dark body, or planet, revolved around that star at a distance of near three billion miles, and that it had a surface temperature of only a few degrees above absolute zero. It would never be able to support life of any kind.

The next to return was the expedition that had gone toward Procyon in Canis Minor. Their report was that round that yellow star, besides the faintly luminous companion of sunlike dimensions which could be made out from Earth there revolved eleven planets, three of which were accompanied by satellites. From the standpoint of life, such as exists on Earth, all except one of the eleven had orbits which were either too close or too far from that luminary. The planet whose orbit was situated at the best distance for both heat and light also had a dense gaseous envelope or atmosphere. Seen from the distance of a few million miles, it appeared to be just the world that man was seeking as the goal of the Second Great Expedition; but, on landing, it was found to lack one of the chief essentials necessary for the support of life—such as exists upon the surface of the world where man originated—oxygen in the atmosphere.

Exactly at forty-eight hours of each other the expeditions that had gone toward Vega and Formalhaut were sighted. But before they hove into view it was known that their quest for a world revolving around those two stars toward which the proposed Second Great Expedition could start was equally fruitless. The two ships that had gone Vega-

ward were the first to return to the surface of Earth. They found that Vega had a family of seven large primary planets still in a gaseous stage, the smallest of which was much larger than our own mighty Jupiter, and each was attended by numerous satellites whose size ranged from one hundred miles in diameter to a few with a diameter of five thousand miles. Water could not exist in its liquid state on any of those satellites because the heat they received from their primaries and from Vega was too great.

Around Formalhaut, too, were many planets, but the one which approached nearest in its resemblance to the Earth was still in an early evolutionary state that followed close upon the formation of a crust over a molten interior—the eruptive stage. Around those two stars there was no place for man—as yet.

The scouting expeditions that had gone toward Arcturus in the constellation of Bootes, Altair in Aquila, and Sirius in Canis Major were still to be heard of.

A year and nine months after the expeditions from Vega and Formalhaut had returned, a message came to Earth from a small, slow-moving interstellar ship cruising near Neptune that a battered interstellar ship—one of the mile-long ships built for long distance travel—had been seen hurtling past Neptune on its way toward Earth at its greatest velocity and then suddenly had begun to act strangely. With diminishing speed it was swerving hither and thither as if no one were guiding it.

Large interstellar ships were dispatched from Earth to investigate. They came upon that battered interstellar ship between the orbits of Uranus and Saturn. Those who were on the lookout on the ships seeking it were the first to see that the whole forward end was riddled with large gaping holes. It was taken in tow and brought to Earth.

When it was forced open they found that not one human being of all three complete crews was alive inside that battered ship. Most of them had met instant death out there in the depths of space near Altair when the ship was struck. A few had managed to survive the shock and had barricaded themselves in the air-tight chambers which housed the driving apparatus and guiding mechanism.

There were hardly enough left to work the ship, yet it had to come back, for it was certain death to delay an attempt to repair the damage at the forward end of the ship.

Disregarding whatever might lie in their path, they drove the ship back at full speed. A thousand times they missed utter destruction by a hair's breadth. Before the accident the machinery had run smoothly and automatically, now the few survivors had to watch and repair it almost continuously to keep it from shaking apart.

Though the task would have been too much for even three times their number, they stuck it out for more than half the journey back. But flesh and blood can stand only so much, and one by one they began to drop from the ranks of the living. The ship had to return to Earth with

its warning of what revolved around that star toward which it had been sent. The shrinking band of survivors drove themselves on and on. They watched their shipmates die, one by one. More than once did they wish that they had met death quickly when the ship had first been struck. The last of the crew died as the ship crossed the orbit of Neptune.

Of the two interstellar ships that had gone toward Altair in Aquila, only one, with its freight of dead, returned. The other had met in headlong collision with a small dark body about one hundred feet in diameter hurtling through space and was destroyed instantly. The second ship had nearly met a like fate. The only thing that saved them was the warning of the fate of the first. All that they had been able to find was that numerous dense swarms of planetoids, whose individual diameters ranged from only a few feet to many miles, revolved around Altair.

The expeditions that had gone toward Arcturus and Sirius were yet to be heard from. Great anxiety was felt for their safety. Four years dragged by after the battered ship of the ill-fated expedition to Altair had returned and still there was no sign of them. They were given up for lost. As the fifth year was drawing to a close, the scouting expedition that had gone toward the giant orange-hued Arcturus in Bootes returned with the information that at the distance of twenty-five light years from the solar system, the absolute limit set, Arcturus was still many light years away. Fearing that their provisions would not hold out, they did not even attempt to reach it.

The two ships that had gone toward Sirius in Canis Major were yet to be heard from. Years followed rapidly one after the other until a score had passed, and still no sign of that expedition. The belief that some accident had befallen it had crystallized into a certainty. An expedition of ten mighty interstellar ships started out toward Sirius to learn the fate of the others.

Twenty-eight years later one of the ten ships that had gone toward Sirius to investigate the disappearance of the first two came hurtling back to Earth as if it had had all the legions of the universe at its heels. Glowing blood-red, it shot through the atmosphere into the waters of the Atlantic Ocean near one of the largest cities of North America and disappeared underneath the surface. It rose to the surface and came within a mile of the shore where its keel grated upon the bottom and there it came to a dead stop.

A number of ships of air hovering near made for it at once. A door was slid half open in the side of the interstellar ship and the form of a man swaddled from head to foot in what looked like dirty rags appeared for a moment in the opening. Seeing the ships of air drawing near, he made motions with his hands for them to keep away. They seemed to pay no attention to his signs, and continued to draw near. From the shore thousands of men and women were putting off toward the ship in every kind of available craft. The man standing in the half-open doorway of the interstellar ship moved back out of sight and snapped the door shut with a clang. A moment later there came

a wireless warning to keep away from the ship, because those who were left of the crew were in the grip of some loathsome disease which they had contracted upon the surface of the only habitable world that circled Sirius.

A number of men of science and phsicians were ordered to board the ship to study the disease. Officers from the department of Public Health were ordered to form a cordon around the plague ship with their airships until the physicians and scientists with their supplies had boarded the stricken vessel, then it was to be taken in tow to a lonely spot on the Atlantic coast and beached. No one was allowed to approach it under the penalty of being placed in quarantine aboard the interstellar ship until the disease germs were isolated and conquered.

This disease was of an exceedingly virulent nature. It attacked every living thing which was brought aboard for experimental purposes. No creature, cold- or warm-blooded, was immune. Once contracted, it ran its usual course, ending in death. In some cases the disease lasted for a few months, and in other cases it took many years to kill.

The disease was totally unknown to man. The phsicians could do nothing for the remnant of the crew still surviving; they could only look on and make their sick as comfortable as possible. In some respects the disease resembled leprosy. As it neared its final stage, lumps of flesh rotted and fell from the living frame.

The physicians and scientists worked feverishly. Months went by and they seemed to make no progress. The crew were the first to go, then the physicians succumbed. Not until nearly all of the physicians and scientists who had boarded the ship—they had all contracted the disease within the first forty-eight hours—had died from it after years of tireless research, was the disease finally arrested and finally conquered by means of an antitoxin.

The story that the crew gave out to the world was this: when the ten mighty interstellar ships drew near Sirius they slackened their speed a little until they neared the outermost planet revolving around that bright star. From a great height they circled it. Its atmosphere was hardly worthy of note. Man could not live upon that world, not unless he brought his air with him. The next three planets, in order, to Sirius were also unfit for human habitation for various reasons. There was something familiar about the fifth outermost planet. It had a ring around it that resembled Saturn's, composed of myriads of tiny moonlets. That fifth outermost planet also had an extensive atmosphere.

The ships drew swiftly near that world. It had the appearance of a wondrous jewel, worthy of all hardships. From the angle at which they were approaching the ring looked like two handles by which the Sirian world could be grasped. The moonlets which composed that ring ranged from a few hundred feet in diameter to about five miles. The larger masses of that ring were nearly all globular.

Hazy patches, which later became more distinct and were seen to be great bodies of water and land, seas

and continents, could be made out on the surface. Drawing nearer, light and darker areas, barren tracts and regions covered with vegetation, stood out. Winding rivers and lakes could also be seen. Still nearer, large cities in the midst of the darker areas and at the shores of the seas came into view.

One after the other at the intervals of a minute or so the ten interstellar ships shot into its atmosphere. The friction of their passage through the most rarefied part of the gaseous envelope caused them to glow red. Almost as soon as they entered the atmosphere, thousands of tiny ships of air leapt up from the surface of both land and water in an effort to attack the ten ships that had come from out of the void, but they were traveling too high and too fast. From each of the tiny ships of air there came bright flashes as if they were discharging weapons which resembled the ancient artillery of man.

Crossing high over one of the cities in their path, the first interstellar ship in the lead dropped a little lower to see what manner of intelligent creatures built and inhabited it. The city, it was seen, was composed of huge masses of masonry; in its center were a few masses larger than the rest. And as the ship drew near those larger masses of masonry a strange beam of a dozen different blending hues leapt up and touched it. Though it was traveling at a high velocity, the ship came to a stop as if it had struck a slightly yielding but impenetrable barrier. It could neither go forward nor draw back. For a moment it hung motionless and then began to drop slowly down as if it were being pulled by some powerful magnetic force.

The interstellar ship, with its driving rays that were powerful enough to hurtle it along at two-thirds the speed of light, turned on full, tried to rise, to break away from the force that was drawing it down to the surface of that world, but it could not. There was an uncanny resemblance to a fly being caught securely in the sticky strands of a spider's web. Lower it was drawn and still lower. The other nine ships could do nothing. From other parts of the city there gleamed forth the same strange beams of blending light and the nine interstellar ships swerved from their course.

Those aboard this ship began to realize their danger. Their driving rays could not free them. They were very near the tops of the masses of masonry which composed the city. They got a confused view of the inhabitants, creatures nearly all arms and legs, scrambling away from the danger zone. Hardly a mile above the mass of masonry from which the beam came, the officers in command of that ship ordered a few of the largest bombs to be dropped. There was a roar and the mass of masonry directly underneath the ship was blown to bits.

The force which had been drawing the interstellar ship down disappeared with the destruction of the structure. It started to rise, but it did not get far, for it was instantly set upon by thousands of ships which clung to its surface like iron filings on a magnet. Their weight drew it low again. Near the center of the city there was a large cleared space and

the strangers who clung to the interstellar ship were trying to draw it down to that spot. Before it reached the ground, there was a mighty explosion and a great flare of blinding light, and a dense cloud of smoke and dust rose high in the air. The interstellar ship and the small ships of air that clung to it were destroyed. There was no sign of the city, except a deep hole in the ground, where the city stood. Whether the explosion came from the interstellar ship or from the ships of that world, it was impossible to say.

The nine remaining interstellar ships, as they continued on their course around the new world, gave all cities a wide berth after that, for the fate of their sister ship made them keep a sharp lookout. They traveled as fast and as high as possible. Whenever they saw any beams of light point heavenwards they swerved from their course.

The intelligent inhabitants of the Sirian world seemed amply prepared against invaders. Their weapons and the relentlessness with which they attacked the nine interstellar ships were beginning to worry the leaders. They were allowed no respite.

Crossing over some low mountain ranges, guns roared forth from below, a few of the projectiles striking lightly on the bottom of the ships. There were other ships on a sea, also armed with great guns, and they kept up a steady firing as long as they could. Nearing a fertile plain, thousands of tiny ships of air rose to bar their progress. Everything that moved, anything that had any height, carried weapons and used them in an effort to destroy the ships from our mother Earth.

The inhabitants of the strange world guessed rightly that the ten interstellar ships had not come just for the pleasure of it. That world was so well prepared for defense that they must have been expecting them. Had they been watching the approach of the interstellar ships as they came within the glare of their sun? Hardly. The ships traveled so swiftly that it was almost impossible to see them. Then again they could not possibly have prepared themselves so well in so short a space of time.

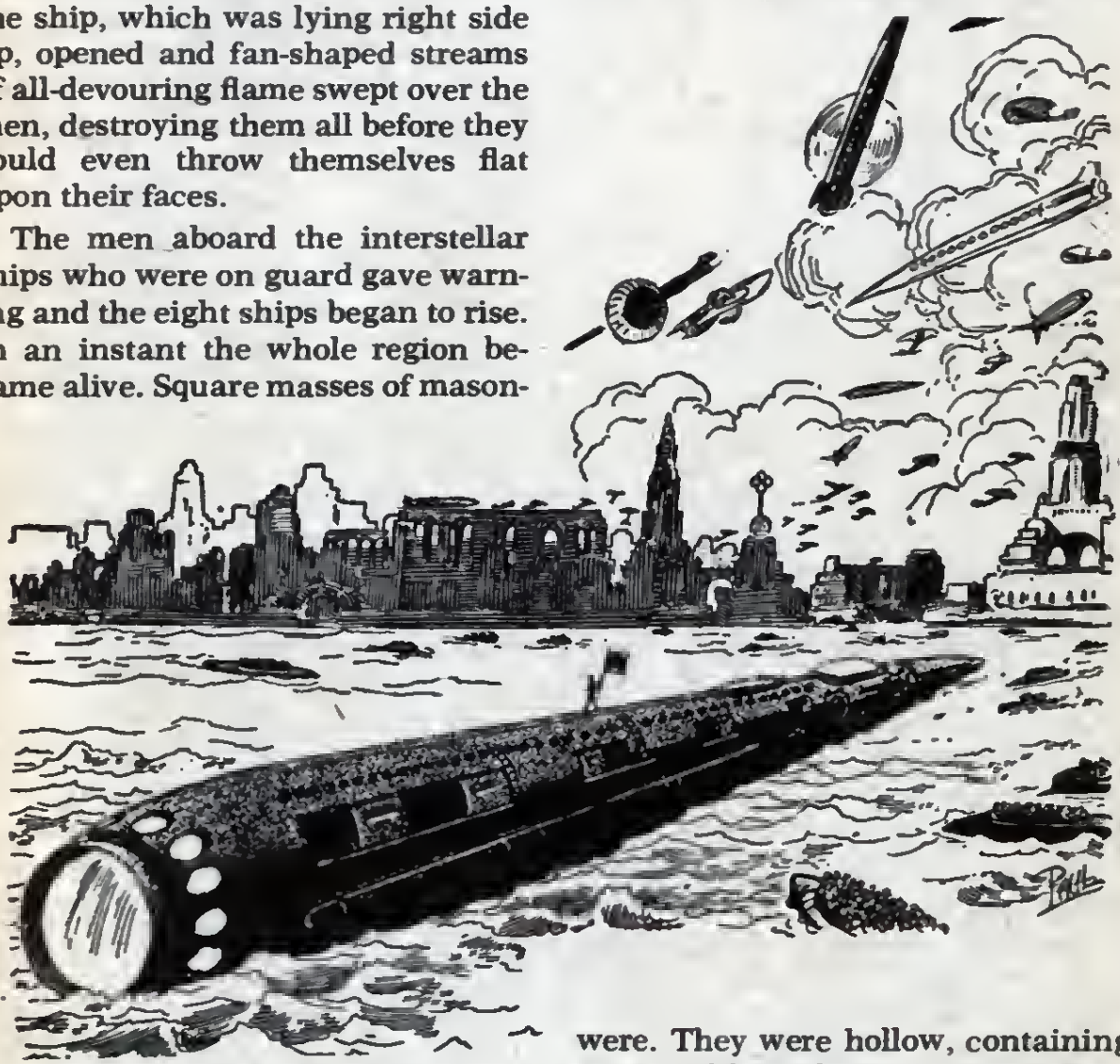
Half way around that planet the visitors came to a desert, in the middle of which were two mighty interstellar ships such as the scouting expedition which had left the Earth for Sirius long before. That explained everything to the commanders of the ships from Earth. That was the reason for the Satellite's preparedness. The interstellar ships, all except one which was ordered to cruise about and keep watch for any suspicious signs, dropped to the surface near the two ships to learn whose fate they had come all the way from the solar system.

The region seemed utterly deserted. There was no sign of man. Nothing moved near the two ships. It did not look as if any of the creatures of the new found world had ever neared it. One, broken and twisted as if it had been dealt a terrific blow, was lying on its side, the other rested right side up as if it had come down with some one still at the controls.

In the form of a ring the eight ships slowly settled around the two wrecks. At the least sign of anything suspicious they were ready to shoot up into the heavens, rapidly regain-

ing speed. The atmosphere was tested and found fit to breathe. From each of the eight ships a number of the crew and inmates armed to the teeth, came forth to investigate the two interstellar ships that had many years ago carried the scouting expedition to Sirius. They approached warily. Suddenly the wide doors on the ship, which was lying right side up, opened and fan-shaped streams of all-devouring flame swept over the men, destroying them all before they could even throw themselves flat upon their faces.

The men aboard the interstellar ships who were on guard gave warning and the eight ships began to rise. In an instant the whole region became alive. Square masses of masonry rose jerkily from below the surface. They covered the whole region for miles near the two stranded interstellar ships, and from the rising masses of masonry the mouths of guns could be seen, bombarding the eight interstellar ships, destroying them one by one before they could rise more than their own length. The interstellar ship which was cruising about high in the heavens took alarm and started to speed away. A great gun stuck its mouth up from below the surface and poured a silent stream of projectiles toward the speeding ship. A few of the missiles penetrated into the chambers where the crew were. They were hollow, containing a vapor-like substance under pressure which was rushing forth steadily from a number of minute holes. Men grabbed the missiles and threw them into tanks containing water. The ship was out of range before any great damage was done.



A year after the ship left the ringed

world which circled Sirius, a terrible disease broke out among the operating crew. The disease-germs were traced to the projectiles which had been fired into the ship as it sped away from the attack. All on board were infected, and they began to succumb one by one. The reserve crew were at last awakened from their state of suspended animation and took over the duties of the ship. They, too, contracted the disease. At last the ship reached the Earth.

Years passed. The Second Great Expedition, also a terrible punitive expedition, now had a goal in view. Preparations of the expedition down to the most minute detail were completed. The creatures who lived on the satellite which circled about Sirius would be sorry they ever attacked man.

Had those intelligent creatures who inhabited the ringed world of Sirius not attacked and destroyed the two expeditions from Earth, man, on discovering that it was in sole possession of highly intelligent creatures, would not have dreamt of invading it, but now . . .

The beginning of the following year the expedition would start. A few more months and the day would dawn. The men and women who were to go were given a final round of training and then sent home to spend the remaining days with their families. The months dwindled down to one month, the one month to a week, the week to one day more—tomorrow.

It was impossible for sleep to come to any one on this particular night, for the night was being kept vibrantly awake by the incessant hum of countless voices, like that of angry bees, that rose and fell upon the chill night air. It came from the great dwellings, light streaming from each window, that towered up and up into the night until they seemed to merge as one with the star-flecked sky overhead, huge piles of steel and masonry that housed on the average of five thousand families to the building. It came from the many different street levels and wide recreation squares that were swiftly becoming crowded with people, mostly young. It came from the very air overhead through which youth was flashing on the wing. It was everywhere, a throbbing murmur of mingled weeping and laughter in which laughter was slowly becoming more and more pronounced.

On this night, as on that other memorial night, many millions of families were experiencing the sharp pangs of parting with their loved ones who were leaving upon a great adventure. They would most likely not return. For those who were going, as always, the thrill; for those who were to remain, the heartache. In nearly each and every apartment of those who were going, there were real tears and forced laughter and wishes of good luck. Some mothers tried bravely to hide their real feelings, but their laughter, plainly forced, jarred on their nerves; others wept bitterly and yet clung harder to those who were leaving.

All over the Earth it was the same, east or west, south or north, the members of the Second Great Expedition were taking their last leave of their parents, of their brother and sisters and friends who were either

too old or too young or physically unfit to accompany them on this stupendous adventure, which was being launched into that boundless void of space out beyond the bounds of the solar system. Keepsakes, locks of hair, and every imaginable remedy for pains and wounds were being thrust upon them from all sides and steadfastly refused as they personally packed their slender kits. Only pictures of those whom they would probably never see again in flesh were being reverently placed away.

All this activity was like that of a busy hive of over-crowded bees preparing to swarm.

The order had gone forth that every one must be ready at his appointed place an hour after dawn. Since they were old enough to walk they were drilled and now they were ready. That order only applied to the rank and file of the expedition. The officers, trained thoroughly in the recently resurrected art of warfare, had gathered from the four corners of the earth months before for the last practice trips out into space in the interstellar ships. They were now gathered together for their final instructions. A high standard, physically and mentally, was demanded of the officers. In their hands would rest the fate of the expedition.

The officers had also to go through the ceremony of swearing allegiance *en masse* to the quota leaders of each zone—a most impressive ceremony, that would mark the official end, as far as the authorities of Earth were concerned, to all further responsibilities of the Second Great Expedition. From that moment on, it would be entirely in the hands of the six military leaders and their six hundred thousand officers. That expedition was not, like the first, one of peace settlement on far-off worlds beyond the bounds of the solar system; this was an expedition of conquest.

At the hundred and twenty-first century of the New Era the world was divided into three zones of almost equal land surface.

From each of the zones had been drawn an equal quota of boys and girls—now men and women—of high physical and mental standard. In the years that followed they were assigned to vocations for which the tests showed they were best fitted and they were trained thoroughly in the various trades, professions, and sciences. Besides their vocations, the rank and file of the expedition were trained, as a secondary consideration, in the art of warfare; but the officers had studied, primarily, the art of maneuvering the mighty interstellar ships, which were to carry the forces of the expedition and to handle their terrible weapons of destruction, to lead their forces on landing and by their example of utter disregard for life spur them on in their conquest of that ringed satellite revolving around bright Sirius.

Six were selected from among the officers to lead the expedition, three of each sex, one for each quota. The six leaders-to-be were selected for their mental qualities to command and lead their quotas as other youths of the expedition were selected and trained in the occupations for which they were best fitted.

A few more brief hours and the day for which man has waited for

many years will have dawned. The night was still young. It was being whispered with a knowing smile that man would have a wild celebration tonight, and for many nights to come. Every one would participate, the old and the young; those who were to stay as well as the youths who were to go.

Was there any wonder, then, that those who were to go should try to tear themselves away as quickly as they could? For they, with the utter thoughtlessness of youth, wanted to be out and enjoy the mad revelry of this night which many were hinting about. Didn't they deserve it? They had trained and trained for years; little enjoyment had they gotten out of life, and this was to be their last night of freedom on Earth. Besides, they wanted to get over the painful scenes of parting as quickly as possible and be out with their comrades. Those who were to be left behind held on to them more tightly as the clocks ticked the speeding minutes away.

The different levels of the wide avenues and narrower side streets were already thronged with crowds of laughing-eyed boys and girls—members of the expedition in their centers—, while sober-eyed men and women stood watching from the windows. The ages of those who were to go ranged from twenty to twenty-four. Only those so young could go; for the journey would take more than thirteen long years, time enough for them to mature. But they did not seem to worry, they were happy, extremely hilarious.

Their overbubbling laughter was but youth's natural rebound of spirits from their heart-wrenching partings at home. They never expected to see any member of their respective families again, unless they caught sight of them as they marched past them on the great review tomorrow, because from that display they would march directly to the various underground railway depots that would take them to the far north and to the far south where their interstellar ships were in readiness—long, slender vehicles that were fully provisioned to take them on their terrific voyage to the neighborhood of Sirius and the ringed world that revolved around it.

Arm in arm, ten and more abreast, with one or two members of the expedition in the middle, they swung up and down the different levels, talking, laughing, singing—excitedly happy. Those who wore the white, yellow, and black uniforms were scheduled to start at midnight tomorrow. Youth made sport of everything even of death. They cared nothing for the tears and dark forebodings of some of their pessimistic elders.

Youth at no time ever gave heed to the uncertainties of tomorrow. Was not the triumphant example of the First Great Expedition ever before their eyes? Who could forget their glory? And the worlds that they had gained for man out there urged them on. What did they care if the world which was the goal of the Second Great Expedition was already inhabited by intelligent creatures who possessed weapons capable of destroying their mighty interstellar ships? It would be a different story this time. The expedition was no

mere scouting expedition. They were equipped for war.

Besides being the last night under the open star-sprinkled sky from the surface of Earth for the members of the expedition, it was the last day of the old year, tomorrow, the first of the new. The new year had always been celebrated. Before the new year had aged but one day they, the rank and file of the expedition, would all have entered their ships and be dead, as far as the inhabitants of Earth were concerned.

It was growing late, nearing midnight. The great day was approaching. Expectant eyes were turned impatiently up to the huge illuminated dials on the various buildings, and they watched the minute hands as they slowly crept toward twelve. Just a few minutes more and the new day and the new year would come into existence.

The people were pouring out of the great residential buildings in their thousands, more and more each passing instant as it approached closer to the hour of midnight. The doorways were jammed. It seemed as if they couldn't come out of the buildings fast enough at the different street levels, so they began dropping down on wings, like fluttering leaves on a windy day in autumn. It was the same in every city and town of any size. The different street levels and recreation squares were becoming packed to the point of suffocation. The inhabitants of the huge piles of steel and masonry seemed to have only one desire—to get out into the open.

Suddenly the strident whine of the attention-arresters connected in series with the loud-speakers signalled the people for silence. A hush fell upon the restless throngs on all levels. The speaker, whoever he was, must be important, else the message must be of vital interest, or the radio loud-speakers on the municipal building would not signal the people for silence.

In every city and town in the world a voice began to vibrate from the loud speakers near the top of the public buildings. The voice was recognized immediately. It belonged to Thadeus, President of the Three Zones. His kindly voice was addressing them, inspiring them as always.

"It is primarily to you, the young people of Earth who are going to extend the glories of man in other worlds, that I wish to speak. You will never hear my voice again. I have put off this address to the last moment. I have no excuse to offer. I wish that I could go with you, but I am old and the blood runs sluggishly through my veins. Only youth with all its reserve of vital forces can survive the journey.

"It has come to my ears that many of you are planning excesses tonight which you will only regret later. You wish to throw all restraint aside. But don't. Tonight is to be dedicated to nobler thoughts. To inspire you on to great deeds, I have ordered the same instruments to play that wonderful melody tonight, that was played for the First Great Expedition a thousand years ago.

"But I have something to say to you first. You are on the eve of your——"

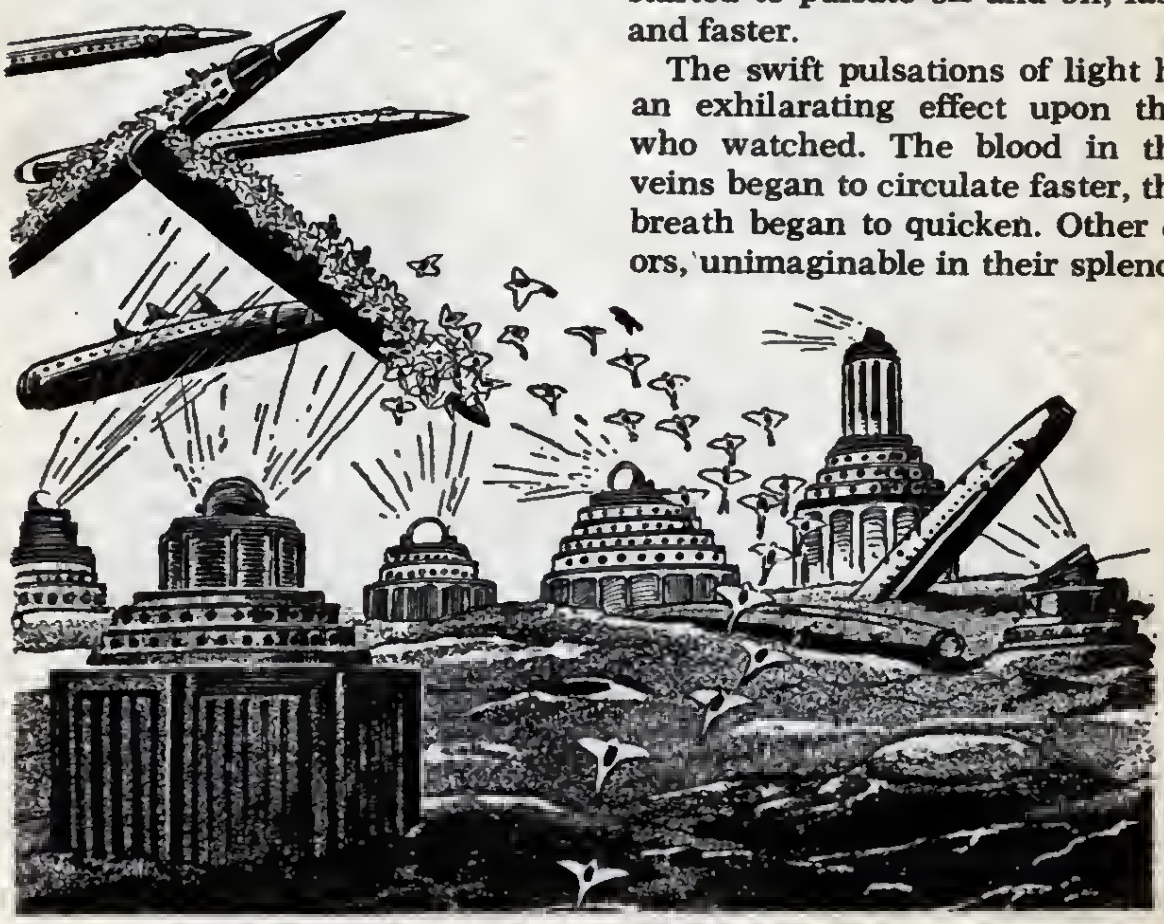
Before he had well begun that last sentence the hour of midnight

came on the eastern seaboard of America. There was a sudden hush before the chimes began to toll the dying year into eternity. The silence for an instant was tomb-like. Then a bell broke the stillness, another caught it up, another and then another. Bell after bell began to add its share to the clangor. Every means that could produce sound was brought into play. The discordant, jarring din that they made was appalling. And then, when the noise was at its height, not till then, the youths that packed the different levels gave voice to their joy. Wildly they cried their hurrahs. Their shouting for a moment even drowned the bells and other shrill noise producers.

Then, as if to welcome the new-born year, beams of intensely brilliant light flashed upon the heavens. They were of every conceivable shade and color, and came from thousands upon thousands of huge searchlights, each a billion candle-powered or more,—their rays sweeping back and forth upon the dark midnight sky.

They blended, melting into each other, living colors that changed and changed and changed. The beams began to sweep in circles, ever widening and narrowing, interweaving one into the other. The heavens from horizon to horizon were criss-crossed with them. Then all as one, the beams went off, then on, then off. The combined light of all the myriads of high powered searchlights, still interweaving into each other, started to pulsate off and on, faster and faster.

The swift pulsations of light had an exhilarating effect upon those who watched. The blood in their veins began to circulate faster, their breath began to quicken. Other colors, unimaginable in their splendor,



came out and swept the heavens as waves move across a sea. By their light the night was being turned into a man-made day.

The discordant clangor of the bells seemed to pause in indecision, died down to a mere whisper and then were stilled. But the beams of colored light still pulsated and swept across the midnight sky.

But what was that which was coming? Oh so slowly! From far off it crept nearer and nearer. What was it? The senses strained. Then it was recognized by the ear as vibrations—sound. It came closer, became louder. It echoed dully from point to point. Of a sudden it was everywhere, sweeping down upon the Earth, bursting forth like the staccato of a mighty drum—as if the taut sky of the Earth itself were being used for a drum! It beat time. Then, accompanying it, there wailed forth the liquid notes of a violin, a violin magnified a billion billion times, a colossal violin, yet not—not loud.

Spasmodically it rose and fell upon the night air, the night which no longer was night. It sobbed in a sudden ecstasy of joy, it sang with the promise of a wondrous future. It wailed as if it hinted at the thought of failure, then it rose higher and higher, as if it were ashamed of such lowly thoughts. It changed from mood to mood until it seemed to catch the feelings of hilarious youth that thronged the open. It carried them up and up into the sublime heights of emotional enthusiasm. It made them feel that for mankind they would go through the torments of the damned. Then it took on the stately tones of an anthem. But oft-times it sobbed until the soul seemed to sob in tune with it.

Melody, the like of which had been played a thousand years ago to send off the First Great Expedition on its successful venture, played on through the night, while the intensely brilliant beams of colored light kept perfect time. The mind can hardly comprehend the volume of it, or its wonderful, all-pervading inspiration. It told of man climbing up and up, never resting. The throbbing of the drum and the sobbing of the violin tore the heartstrings apart with the wonderful melody and with the story it tried to tell.

Hours passed. It seemed as if that melody would continue through all eternity, like the so-called music of the spheres.

The first day of the year 12,001 of the New Era dawned. On the following day the Second Great Expedition was scheduled to be launched into the boundless infinity of space toward Sirius. The First Great Expedition had gone toward Alpha Centauri and met with no opposition. They had peacefully taken possession of the two worlds which their scouts had selected as the only two fit human habitation. Their ships were not filled with weapons for destruction, but with tools for construction. To each who had braved the terrors of the unknown there had been allotted a thousand acres of the choicest land upon the surface of those worlds.

It would be different, though, for those who comprised the Second Great Expedition. This would be no peaceful settlement. The ringed world, the only planet around Sirius,

was inhabited by intelligent creatures. The inhabitants of that world had proved themselves well prepared to defend their world against invaders. Thousands of men had already lost their lives upon that world, before one hostile move had been made.

It became a matter of self-preservation. Upon the surface of that ringed world there were a number of interstellar ships which the creatures had managed to bring down. Some were instantly destroyed, others were not. To creatures as intelligent as they undoubtedly were the machinery within the interior of those intersteller ships was not too intricate, nor the driving mechanism too hard to understand. To the race of man there were three reasons why their extinction was a vital necessity; they were too well prepared for war, too near the solar system, too near level of man.

On the wide first balcony of the recently erected Academy of War, Thadeus, President of the Three Zones, a spare, stately figure of a man grown old slowly, stood watching the almost endless line of officers of the expedition, one hundred abreast, as they drew near the wide portals for the farewell address and the ceremony of swearing allegiance *en masse* to the six selected leaders. Proudly they carried themselves. They moved as one. President Thadeus's kindly yet determined face lit up with pride—just pride, for had he not devoted the major portion of his life to the preparation of the expedition? When Death had called his predecessor, ably had he grasped the reins that the cold hands had let go and brought the preparations of the Second Great Expedition to a successful termination. He had done yet more, he had personally taken charge of the training of the officers. Though his duties were manifold, he never missed an opportunity to watch them and note their improvements.

The recently erected Academy of War—which had been built primarily to teach the science of warfare to the officers of the Second Great Expedition, stood in an isolated spot far in front of the three governmental cities which represented the three zones of Earth. The three governmental cities were really one, divided into three triangles and separated from each other by mile-wide paved boulevards. The two paved boulevards came together in front of the Academy.

Down one of the boulevards officers and men, were marching, They were the officers of the Black Quota and would be the first to enter. At the head of the officers of the Black Zone strode their young commander. He was distinguished from the rest of his officers by a flaming-red silken crepe over his jet black uniform which was long enough to reach from shoulder to heels and which fluttered out behind him as he moved proudly forward.

The balcony upon which President Thadeus stood was five hundred feet above the paved surface below. The Academy of War was the tallest building on Earth. Its topmost pinnacle towered thirty-eight hundred and some seventy odd feet above the surrounding country.

Upon the balcony, on either side

of the president, stood Zenofia, Commander of the Black Female Quota, and Ureena, Commander of the Yellow Female Quota; each was watching the marching officers through a pair of powerful binoculars. The two leaders had over their uniforms their flaming-red capes, the insignia of their rank.

Zonofia towered over the other two on the balcony. She stood five feet, eleven inches in height and one had but to glance into her eyes to see why she had been selected to lead her quota. She possessed intelligence, determination which could surmount all obstacles, and the power to have her slightest command obeyed without question. Ureena, in contrast, was barely five feet in height and built daintily. There was little they had in common except the power to lead. Where the other would climb Ureena would go around. Strategy, not determination, was her forte.

Matilda, Commander of the White Female Quota, possessed the qualities of both besides a dash of reckless daring. She was hovering near the balcony on a pair of individual flying wings which were strapped firmly upon her shoulders with a metal brace and wide straps. The flying wings were thin, reinforced metal plates that could open and close like the feathers in the wings of a bird. Each wing measured a fraction over thirty-six inches, and was made of an aluminum alloy that was much stronger than the finest steel. What the wings lacked in size they made up in power, for the wings were operated by a powerful atomic motor that weighed only five pounds, yet could develop twenty horsepower with ease. The atomic motor could vibrate as fast as the wings of an insect vibrate. Over her head and fastened to her shoulders she wore a conical helmet of transparent substance that lessened the air-resistance and let her breathe evenly.

The Blacks had nearly all entered the great Academy and the Yellows with their yellow uniforms were just coming into view down the second boulevard. At their head strode Keelen, Commander of the Yellow Male Quota. Ureena, Commander of the Yellow Female Quota, leaned over the balustrade to watch him through her glasses a little better. They were betrothed.

Commander Keelen at the head of his officers was approaching swiftly. No one could mistake him with his cape of flaming-red silk that fluttered behind him, his badge of leadership. Impulsively, Ureena called to him, though she did not expect him to hear. The tramp of thousands of metal-shod feet in perfect unison would have drowned out her voice had it been a hundred times as loud. Thadeus, who was standing between the two girl leaders, glanced down at her and smiled. Well did he know of their attachment for each other. It was one of the few things at which he wondered greatly. Her —their feeling for each other was a throwback to when love, not eugenics, ruled mating.

Through her glasses Ureena saw Keelen's head go back and his eyes begin to travel up the wall of the Academy of War to the first balcony upon which she stood. She leaned

over the balustrade a little too far and lost her balance. With a startled shriek she slipped over the top of the balustrade.

At her shrill cry President Thadeus turned his head and saw her falling. His hands darted out and caught the red silken cape as it fluttered over. But the cape was very thin and began to rip almost before it felt the full strain st the other end. Zenofia, the black leader, was more than a half dozen paces from Thadeus. At the cry she too turned her head. She grasped the situation instantly and began to run toward the falling girl. There was a slight chance that she might reach there in time to put her hand through the openings in the balustrade and catch hold of Ureena's clothing before she fell.

Matilda, the white leader, who was hovering near on wing, heard the cry and realized that she must act at once if the other was to be saved. The cape was parting swiftly. Zenofia was still four paces off.

If Ureena was not saved, the rank and file of the expedition—the masses even at this late date were still in a measure superstitious—would consider it a dreadful omen. It would take the heart out of many. She had the power to help if she could reach her in time. So almost as quick as a flash she plunged to the aid of the little yellow leader. But even before she sped her own length she saw the cape must break before she could possibly reach her. It seemed as if the few whole threads in the cape were snapping.

The air seemed to quiver with chilled suspense. The tramp of the thousands of metal-shod feet below sounded as if they came from a distance immeasurably far off, from a different world..

Matilda saw the face of Thadeus turn deathly pale as he gazed at her and saw how far off she was. He hears the thud of flying feet behind him and glanced back out of the corner of his eye. Zenofia was still three paces off. Glistening beads of sweat came out all over his wrinkled face. The wings upon her back were beating the air heavily to gain the momentum. She saw his lips frame the words:

"Faster! Faster!"

But still she was far off. Every fraction of an instant she was gaining speed. Would she be in time?

The cape parted! With an awful despairing cry Ureena plunged downward. Half of her flaming-red cape fluttered behind her. Like a meteor she fell.

Matilda reached the spot a second too late. With the speed of a shot she hurtled after her. The hum of the metal wings on her back grew shrill with their speed and their power.

Those on the ground level five hundred feet below felt the impending danger of the body that was hurtling down toward them. They looked up. Those directly under the balcony took in the full significance of the tragedy and started to draw back hastily. Those from a distance saw the white leader hurtle after the other in a desperate effort to save. It seemed futile to them. Yet their breaths were tightly drawn in as they saw her increase her downward speed still more.

Commander Keelen, who was glancing at the huge sculptured figure of Mars, the ancient god of

war, just above the main entrance to the Academy, not up at the balcony as Ureena had imagined, also glanced up. Into the field of his vision flashed the bright yellow uniform and the fluttering half of the flaming-red cape. Only one on Earth had the right to that combination on this day. He started to run to the spot directly under, as if he could break the force of her fall with his own body. He did not seem to realize that he could never reach the spot in time, and if he did the force of her fall from that height would crush them both to pulp.

Faster and yet faster did Matilda drop in pursuit, the wings on her back whining terribly as they forced her down with the speed of a bullet. Her hands were outstretched. Her body was as straight as an arrow and rigid. Only her fingers moved, opening and closing spasmodically upon the empty air. Would she never reach Ureena?

At last the tips of her fingers touched the fluttering half of Ureena's cape, then it fluttered about her wrists, now her hands gripped cloth and held. It was not the thin silken half of the cape, but the sturdy yellow uniform underneath.

The wings, their action slowly reversed, braked their downward rush and after a moment of poising began to draw them both up.

Just a moment or so and it was over.

From below there rose a roar as the seeming impossibility was accomplished. A moment later the name of the lady who was snatched from death ran like wildfire through the ranks of those below. Pandemonium followed. Those below were mainly the officers of the Yellow Quota.

The look of gratitude that old Thadeus gave her as she hovered over the balcony with her burden more than repaid her for what she had done. President Thadeus had always been like a fond father to the three female leaders.

His eager hands reached trembling for Ureena and laid her gently upon the marble floor of the balcony. She did not move. He bent his head to her breast and detected the fluttering beat of her heart. He began stroking her hands.

She uttered a long drawn-out sigh. Her eyelids quivered for a moment and then opened wide. Wildy she gazed about. Surprise was in her eyes as she realized where she was and saw the familiar faces of those she knew, bent over her. It was plain to see that she did not expect to find herself in the land of the living again.

Physically she was none the worse for her narrow escape. The scare that she received, however, would probably make her afraid to venture upon high places again.

She made an effort to speak, gulped, and then asked incredulously:

"Was it only a dream that I felt myself slipping over the balustrade and falling to certain death on the stones below? Did I not really fall?"

"Yes, child," Thadeus answered softly, "you did fall, but you were saved by your white sister who was hovering near on wing. You are not hurt, my child, are you?" he ended anxiously.

Ureena shook her head.

Her rescuer, who had perched herself on the top of the balustrade,

waited to hear no more. She stood up, turned her back on those on the balcony and started her wings a-vibrating. The wings drew her up, up until she was at the three thousand-foot level and then she sped like an arrow toward the barracks where her thousands of girl captains were gathered, waiting for her to come and lead them.

She reached her own private quarters and changed her flying outfit for a snow-white uniform and cape of flaming-red. Swiftly she opened the door leading out of her quarters and raced for the lifts that were to carry her down to the fourth street level. She sped across the moving sidewalks until she was on the one that traveled a mile-a-minute and took a seat. Five minutes later she was at the head of the female officers of the White Quots.

At the door which let out to the first balcony of the Academy of War there came a scraping of metal-shod feet on the marble threshold. The door was given a heavy thud, it swayed outward but did not open. It sounded as though someone had staggered against it. The noise attracted the attention of those on the balcony.

On the face of President Thadeus there appeared a red flush of anger. What clumsy fool was out there who could not see where he was going?

The door was given another thud and swung open. A man appeared upon the threshold. He rocked back and forth upon his feet. He was panting painfully, like a man who, disregarding or forgetting the fast pneumatic lifts, had climbed the rarely used apiral stairway on a run from the first street level.

"What do you want?" one of the physicians demanded.

The man did not reply. His face was of a sickly yellow-greyish color and streaked with sweat. His eyes were wild. Hardly able to stand, he staggered to where Ureena lay.

Ureena held out her hands to him. Startled, Thadeus recognized the man. It was Keelen, the co-leader of the Yellow forces. His yellow uniform was covered with dust from running up the spiral stairway, his red silken cape was slashed to ribbons by the heels of his metal-shod feet as he leapt up the stairs three and more at a time.

Keelen saw that her eyes were open and that she appeared to be unharmed. With a glad cry of relief he threw himself down upon his knees beside her.

He could not speak.

She reached up and stroked his face tenderly. She understood. Words between them were unnecessary.

"Where is she?" Ureena suddenly demanded, quickly demanded, quickly looking around.

"Who?" Keelen asked tenderly.

"Matilda. I have not thanked her yet."

Keelen shook his head.

Thadeus volunteered the information that she had left to rejoin her officers. It was growing late and, according to the schedule, the White Quota of the Second Great Expedition, both male and feamle, had to be on their way north and south to the polar regions within the next three hours.

"How can I repay her?" Ureena broke in. "It is not for myself that I value my life so, but for you."

"Keelen," Thadeus said slowly, "it is time for you to take your place at the head of your officers in the auditorium below. Remember the schedule. Nothing must interfere now. Everything must move as smoothly as clockwork. The White Female Quota of officers led by their leader is even now on its way here. You can see them through the openings in the balastrade. Each of you must speed to your place. If Ureena cannot go I will appoint a proxy to lead them and she can take her place in the auditorium."

"I will go at once, father," Ureena spoke up. "I am still a bit dizzy, but it will soon pass."

"Very well child," he replied. "But you must hurry. Each of you must take your place at the proper instant. There must be no waiting. After the ceremony of allegiance you must go your separate ways, each to lead your legions. Now go, hurry!"

"A moment more, sire," Commander Keelen pleaded.

"A moment, no more," Thadeus granted.

He turned and beckoned to the others and strode into the interior of the Academy. They moved swiftly toward the lifts, Commander Zenofia and the physicians going down to the moving platforms below the ground level, while President Thadeus went up to his suite to don his raiment for the ceremony at which he would officiate.

An hour later President Thadeus stepped into one of the fast pneumatic lifts at the two thousand foot level upon which his suite was situated and dropped swiftly down. At the thousand foot level he stopped and looked out through the transparent

sides of the cage. His eyes slowly took in the details of the vast auditorium of the Academy of War. He could see from the thousand foot height that half of the immense auditorium which was reserved for the male officers of the Second Great Expedition was already packed, every one of the three thousand seats was occupied, while the other half which was reserved for the female officers was rapidly filling up. Then his eyes traveled up, up to the thirty-second balcony and took in the thousands of the leading men and women of Earth from all three zones who were sitting there patiently.

Again he touched the button and the lift sank to the two hundred and fifty foot level on which stood the speaker's box just above the middle stage of the three great stages underneath. As he made his way from the lift along a glass-enclosed gallery to the same box he was pleased to see Commander Keelen, with a new cape of flaming-red silk, on his raised seat facing the Yellow officers. The two other commanders were also there on their raised seats. The white, yellow, and black uniforms set each quota off distinctly.

Next he turned his eyes toward the other side and saw that Commander Matilda was already seated in front of her officers. Commander Zenofia of the Black legions was also there with her officers. The female officers of the Yellow Quota, who should have followed the White forces into the Academy, were just entering one hundred abreast, and at their head proudly move Commander Ureena.

As soon as they were all seated, President Thadeus gave the signal. Slowly the solemn ceremony of swearing Allegiance to the six leaders was gotten under way. Then after he finished reading his farewell address, added:

"For well over two hundred years the people of Earth have labored uncreasingly for this day. They have toiled, made virtual slaves of themselves, worked themselves into early graves so that you who are going may lack nothing. Long, long ago man adopted as his own one of the primary laws of the social order of insects and followed unswervingly their example of placing the race high above themselves, their work, their own petty ambitions. To you who are going will be the glory, to them, the toil. Perhaps as they labored at their tasks they dreamed that it was they themselves who were going.

"Even after you have left the surface of Earth we will continue to aid you. We who remain will force our will power to accompany you and help you succeed as the inhabitants of Earth a thousand years ago willed the success of the First Great Expedition which they launched. Perhaps it was the surengthening power of that will added to their own determination which held them to their course until success crowned their efforts. True, they had nothing to contend with as you will have, and the only risks they ran were the ordinary risks which attend the crossing of interstellar spaces. Yet without that accompanying will and resolution they might have lost heart before they were halfway toward their destination when they blunder-

ed into the head of a dark comet. They lost a number of ships. Had they been on the lookout that accident would not have befallen them. The ships of the present expedition are all equipped with a device which will warn you of anything in your path. Still, they were pioneers, and to them belongs the glory.

"Peacefully they took possession of two worlds that revolve around Alpha Centauri. On not one of those two worlds was there animal life of any description, nothing but a sort of low plant life which resembled moss and was of a deep bluish color. The various domestic animals that they had taken along with them became acclimatized very easily on those planets and probably never knew that they had been transported to alien worlds, while the seeds of various kinds of plant life which man had found useful thrived wonderfully when insect life was introduced from Earth to fertilize them, better even than on their own native world which they had left behind forever.

"Sirius is really a double star, or, as it is better known to the astronomers, a binary. Its companion is of insignificant size, but of intense density. Its distance from Sirius is a little more than the distance which separates the planet Uranus from our Sun. Sirius, as you know, is larger and hotter than our yellow dwarf sun.

"We on Earth have an idea of the kind of life that exists on the ringed world that revolves around Sirius and its heavy dwarf companion. Its inhabitants have some kind of globular central body with numerous limb-like appendages, and have a high degree of intelligence. They menace the security of our existance. The few of our spies who returned were fast in the grip of a terrible disease which our physicians later conquered; they had been able to see some of the works of the strange beings, huge masses of masonry comparable to our greatest buildings. Whatever kind of life exists there, remember, commanders and captains of the Second Great Expedition, that man is SUPREME! Mankind, to the race of men, is all-important!

"When this memorial day ends you will start. When you leave Earth behind, the powerful will of all mankind will follow you, will always be behind you, will aid you. May victory always crown your efforts out there on that planet which has its orbit around Sirius. One thing I shall try to impress upon the minds of those that come after you: Do not forget to be true to Earth and its inhabitants. If you ever need our aid, call, and we will come; if we call upon you, do not be slow in coming."

With that he turned slowly upon his heel and made his way along the glass covered gallery to where he could get the lift that would take him up to his suite on the two thousand foot level. He did not wait to see the quota of the White Zone stand up and begin to file out, the women following the men.

The army of captains from the White Zone, male and female, each going their own way, marched briskly to the various underground railway depots near the three governmental cities that were to take them to the polar regions, the men to the

north, the women to the south. The rank and file of the Second Great Expedition had embarked from thousands of cities and towns and the first were already at their destination undergoing certain preparations which did not apply to the officers.

The whole earth just below the surface was crisscrossed with tunnels. At a speed which was truly terrific the underground trains traveled through express tunnels all the way to the polar regions. The factories within the Arctic and Antarctic Circles were all far underground. There was not a building upon the surface. Six thousand mighty interstellar ships which were going to take the Second Great Expedition on its long journey also dotted the surface of those icy regions of north and south.

Except the six which were to carry the commanders, each of the remaining five thousand, nine hundred and ninety-four interstellar ships was a mile in length. The forward end of each vehicle was of hardened metal and came to a point; the rear, which gradually tapered from the point of greatest diameter near the middle, was one hundred and fifty feet in diameter and held a glass-like lens, slightly convex, that was to drive the interstellar ship at a speed which nearly approached that of light itself. The lens were built up of separate sections and somewhat resembled the compound eye of an insect.

The vehicles were all constructed

of a special alloy which could withstand the extremes of temperature with the least expansion and contraction. The alloy could not, under the most adverse conditions, rust or corrode. All the vehicles had three separate walls. The space between the walls was exhausted of air and so formed a two-fold vacuum that would insulate the interior from the cold of the void between the stars. Once the men were within three massive air-tight doors closed each of the eight entrances into the ship's interior and the space between the doors would also automatically be exhausted of air.

Each interstellar ship was designed to carry a crew of one hundred officers whose duties were to guide and operate the ship on its voyage across space, and, if necessary, to handle the weapons of destruction with which each ship was amply equipped. The complicated driving mechanism was wholly automatic and an occasional glimpse to see that all was running smoothly was all that was necessary. Each of the interstellar ships was also designed to carry nine thousand and nine hundred of the rank and file whose duties would not commence until the ship had reached its destination.

The greater distance which the Second Great Expedition had to travel and the fact that it was an out and out expedition of conquest presented many new problems. To subdue intelligent creatures who inhabited that world, an expedition which numbered many millions was necessary. Sixty million human beings composed the swarm that would settle down upon the ringed world.

From many underground railway depots the men of the expedition had started marching up to the surface of the polar regions where the interstellar ships lay half buried in pits of packed snow and ice. Though the men were officerless, there was not the slightest confusion. As soon as they reached the surface, in an orderly fashion that plainly told of long days of training, they formed into ranks a score abreast and marched to the interstellar ships, each body of men to its assigned place. Every interstellar ship was numbered with gigantic numerals, and the guides to them were roads of snow packed to icy hardness.

Physicians, not belonging to the expedition, but having a vital duty to perform before its departure, had arrived during the preceding week from all parts of the world and had taken up temporary quarters aboard the ships. To each of the six thousand mighty ships had been assigned two hundred of the physicians. They had barely finished what preparations they had to make before the men began to arrive aboard each of the ships in a steady stream.

Everything moved with automatic smoothness. There was no hesitation, no needless delay. Each man knew what he had to do, each man did what was required of him.

On entering the ships, the men five hundred or so at a time, were led into a huge chamber in the very heart of the ships and ordered to strip. Every member of the rank and file had on his otherwise physically perfect body ten or more pounds of excess fat. They were then ordered to pack their clothes in their kit bags and toss them in certain large bins.

As soon as the physicians examined them—the men were inoculated with an antitoxin against the disease germs that the men in the plague ship had brought back with them from the ringed world—they were exposed to certain rays and led through a series of tanks containing various solutions. They were then marched through cleansing showers, after which they dried themselves before screens throwing off radiant heat, and, as they moved along by the press of those behind, they were dusted with a fine powder of sweet, cloying fragrance which was strongly antiseptic. Naked as the day they were born they followed each other in a steady stream into a much larger chamber filled from floor to ceiling with deep coffin-like bunks, row and row until they seemed almost countless, and ordered to lie down in them. Each bunk contained a bedding of blankets spun from long asbestos fibre, also a lid of glass-like substance which would bend but would not break.

As they crawled into the bunks they cried their farewells to each other. They shifted around until they found a comfortable position and then grew still. Their thoughts claimed all of their attention.

Physicians passed along the rows of bunks and injected the drugs which caused instant suspension of animation. The effect of those drugs would not wear off until a certain antidote was injected. The men would need neither food nor oxygen. They could lie in the death-like state of suspended animation for many years without any ill effects except for the gradual diminution of their weight. The lids were then snapped down and fastened.

Before they had finished their task the officers began to arrive, and went about their duties at once, paying little attention to the physicians who were working on the last batch. The officers knew all about the preparations for the "long sleep" (suspended animation) and how to awaken the sleepers. Even if they had wanted to they could not watch. Time was precious.

The officers, on entering their proper stations, made sure that the levers controlling the motors and propelling rays were working smoothly, made themselves thoroughly familiar with their posts. There was no need for them to explore the ship which was to be their prison for the next thirteen and a half years, they were familiar with every detail. They held themselves in readiness, waiting for the signal.

The same thing was going on in the south where the women were also getting ready.

The physicians had just left, were hurrying to the underground depots as fast as they could. The time scheduled for the departure was near. To be out in the open when the ships started to leave would be certain death.

According to the schedule it lacked but a few minutes to the starting time. The doors were snapped shut. The act of closing the triple doors automatically started the pumps to empty the air between each set of three doors. It did not take long to form the necessary vacuum. When the

ships that were to go first had done so, they signalled that they were ready.

It was four minutes after one A.M. of the second day of the year 12,001 of the New Era, four minutes late, that the first mighty interstellar ship slowly began to rear up until its sharp nose pointed up at an angle of forty-five degrees, then it rose heavenwards. It was propelled by the invisible rays of the fifty-fifth octave. It was the ship that carried the Leader of the White Male Quota. Following fast behind it came ten more of the huge interstellar ships. From the South, Commander Matilda's ship flashed up into the heavens toward bright Sirius.

In two streams, one from the north and one from the south, the interstellar ships started on their long journey into the utter void of that airless space between the sun and Sirius. Every minute twenty ships left the surface of Earth. It took nearly two hours before the White Quota alone left the polar regions. The Yellow Quota, waiting an hour, started next. Fast on the heels of the Yellow Quota came those from the Black Zone.

The propelling power of the invisible rays of the fifty-fifth octave swept them along at two-thirds the speed of light. The six slightly larger ships which carried the leaders of each zone were also equipped with the fifty-fifth octave and were able to travel within a few miles of the speed of light itself.

On and on they sped. From far off the Second Great Expedition like the split tail of a comet cleaved the void of space at two-thirds the speed of light. Each quota of men and women kept to themselves in long, quivering lines. There was no attempt for one to mingle with the other.

Five years passed. The sun had long ago dwindled to the brightness of an ordinary pin-point of light. It was far inferior in brightness to Sirius toward which they were speeding. Five long, uneventful years have slowly crawled by since they left the limits of the solar system behind. The officers on all ships had decided to celebrate the day. There was, of course, neither day, nor night, nor year out there, but they governed themselves according to their chronometers which kept Earth-time.

Another year passed. They were in direct radio communication with each other. Nothing broke the dreadful monotony of the seemingly endless journey. The accompanying will that the inhabitants of Earth had sent out to spur them on was beginning to make itself felt as their own enthusiasm lagged. They needed something to spur them on. Out there in the depths of space between stars there was nothing, absolutely nothing. Not even a lonely comet flashed by. The rank and file of the expedition were still sunk in a death-like coma, and for them, naturally, time did not exist.

The Yellow Quota of men who had started in second place began to gain on the leaders. The officers of the White Quota, sensing a means to break the terrible monotony, a race, increased the speed of their ships to the utmost limit. Still the Yellow legions continued to draw near. Little by little they crept up until at

length the lines of the two quotas flashed along side by side. The Yellow Quota held that position for a while and then began to draw ahead slowly but surely.

Commander Keelen flashed the news of his achievement to Ureena, Commander of the Yellow Female forces, and told her to try and do likewise.

The Black Quota chaffed the Whites unmercifully. They likened them to snails, snails speeding along at nearly two-thirds the speed of light! Almost 125,000 miles a second!

Commander Ureena and her quota began to get ahead. The two halves of the expedition, the men and the women, were about one light hour apart, the distance that it takes light one hour to cross.

The officers, dulled by long years of endless monotony, into the belief of the absolute emptiness of space between suns, had ceased to be on the lookout. Each ship was equipped with two extremely powerful telescopes. The telescopes, which had been used almost continuously at first, were rarely used now. It would have been suicidal for the Second Great Expedition to have to depend upon men peering through the telescopes to disclose objects that lay in their path at the terrific velocity they were traveling. The ships were one and all equipped with electrical instruments to warn the expedition of danger far ahead, the six that carried the leaders had instruments of far greater delicacy.

The Yellow Quota was in the lead. Far in front of the main body of the Yellow forces hurtled the interstellar ship that carried Commander Keelen. Behind the Yellow Quota in a long line followed the White force which had not been able to regain the first place it had lost.

Suddenly the instruments in Commander Keelen's ship began to give warning of some impending danger far ahead. The officers, who had been everywhere but at their proper places, hurried to their stations. Telescopes were trained ahead. Nothing could be seen. The instruments continued to sound their warnings, stronger each instant.

He sent warning back to the rest of the expedition and commanded them to come to a full stop as quickly as they could. He then ordered ten ships of his quota to go slowly forward with him to investigate.

In front of Commander Keelen's ships there appeared numerous hazy pin-points of light. Those with the keenest sight at the eye-pieces of the telescopes could barely make them out. They were almost at the limit of vision. Momentarily they grew brighter and nearer. They began to take on form. The pin-points of light were all revolving rapidly around a common center. The instruments that they trained upon them showed that each pin point of light was of disk-like formation and measurable. Calculations gave them a diameter that ranged from four to eight miles. They had probably come from the direction of Sirius and were traveling in the general direction of the solar system.

He had the information flashed back to the rest of the expedition that directly in front of them were hundreds of spheres, each from four to eight miles in diameter. He gave the order to the ten ships to follow him more closely. It was a dangerous thing to do. The spheres were approaching at a terrific speed.

The spheres were whirling swiftly around each other. In their forward flight through the void of the interstellar space they were describing a cork-screw path. They presented a solid, impassable front. Suddenly one of the spheres, which was a little ahead of the others, paused in its whirling forward motion. The spheres behind gradually slackened their speed and came to a stop. They seemed to become aware of the eleven ships in front of them.

It was the first sign that those in Commander Keelen's ship had that the spheres contained intelligent, reasoning beings; that the spheres themselves were interstellar ships. During the next few hours it was verified in the most terrible manner. From the first ball that had paused there broke forth a flash of lurid flame, like flaming gas under pressure issuing from the mouth of a great cannon, it was followed immediately by another and then another. Nothing happened. Fifteen or more minutes later one of the mighty interstellar ships that accompanied Commander Keelen's ship in front of the expedition, crumpled up as if it had met something in headlong collision, became partially incandescent and exploded. An instant later another ship met the same fate.

Without a sound the two ships had exploded. The bolts that had come

from the sphere in the lead, from monster weapons within the sphere, did their work silently. Sound must have a medium to transmit its waves, it cannot cross a vacuum.

The remaining nine ships in front stopped dead on the destruction of the two. For an instant Commander Keelen and the officers were numbed into a state of immobility by the sudden disaster that had befallen them. In each of the two ships that had gone down to instant destruction there had been ten thousand human beings!

The spheres surrounded them on all sides and were coming slowly closer. It could now be seen that the surface of those spheres were covered with bright spots like windows and the light was streaming through them from the brightly lighted interior. They presented a formidable appearance.

Were the brave legions from Earth to meet their doom in the infinite void of space far from the ringed planet that circled bright Sirius and its faint companion? Was the Second Great Expedition of man fated to be destroyed by the intelligent creatures within the globular ships of space that had come from the probable direction of Sirius? Had the inhabitants of the ringed world that circled Sirius known of man's coming and sent these death-dealing spheres out to meet him? Had they in turn scouts spying upon the inhabitants of Earth?

Lurid sheets of flame with their accompanying bolts again came from the sphere. There was another interval of about a quarter of an hour in which nothing happened, nothing was to be seen, no warning came from the electrical apparatus which was to warn the officers of an approaching body. The moments dragged by and then a bolt struck the ship which was a little behind and to the right of Commander Keelen's. Another bolt met in headlong collision with the interstellar ship that was to the left of him. Only seven remained in the front.

They came back to life with a start, the numbness dropping from them as death stared them in the face. They manned their own terrible instruments of destruction. The forward end of each ship which came to a point split into a number of segments and drew back into the interior of the ship. Out in front there remained an egg-shaped object of transparent substance resembling quartz glass. It was supported by three thick rods of the same substance. The rods and egg-shaped object in front of each ship began to glow with a pale-yellow color. It could be seen issuing for a few feet at the forward end like liquid. It traveled much slower than light.

The propelling rays of the fifty-fifth octave were turned on full. The interstellar ship started to plunge forward. Four circular holes appeared some distance back from the glowing egg-shaped object at the tip of the ship. A puff of white vapor and red flame suddenly leapt out of each of the openings. The mighty interstellar ships rocked back to the shock. The puffs of white vapor and red flames appeared at the openings of each ship again and again, swifter and swifter, until they were pouring forth continuously. Though the driving rays were on full, the ships quivered and stood still. At last the remaining seven of the eleven ships

that had gone forward to investigate were going into action.

The pale-yellow glow which emanated from Commander Keelen's ship far in front of the other six reached the sphere in the lead, from which had come the bolts that had destroyed the four ships of the Yellow Quota. It touched it lightly, seemed to caress it. It was not like a beam of light, but a corpuscle stream. It spread over the sphere, like molten gold, until it had enveloped it. The sphere seemed to vibrate, became indistinct, was gone—destroyed. The glow reached over and touched another sphere.

The beings in the globular ships of space seemed to realize the menace of those pale-yellow beams. Creatures to build and operate those huge spheres must possess a very high order of intelligence. The destructive power of that pale-yellow glow was startling. Desperately, and in a solid sheet, the lurid flame and the accompanying bolts shot from the nearer spheres.

The glow from the other six ships seemed to touch with hazy golden fingers and then to caress six other spheres. What had shot from the four openings of each of the seven ships in continuous streams with the puffs of white vapor and the red flame also reached the spheres. Glowing incandescent spots began to pit the surface of a few of them.

The flashes of the lurid light with its accompanying bolts from the spheres were increasing steadily. One and then another of the interstellar ships from Earth met the bolts in headlong collision.

Globular ship of space after globular ship of space faded from sight as the pale-yellow glow spread over them. A number of the nearer spheres became so covered with incandescent spots that they became molten masses of metal.

Only five out of the original eleven interstellar ships in the front remained. Though they brought down three and more to every one of their own, they were going down to certain destruction. There were too many spheres to cope with. The bolts, hurtling all around them, picked them off one by one.

Now only two remained. One, as if by a miracle was the mighty ship that carried Commander Keelen. His ship was causing the greatest havoc amongst the spheres. Something went wrong with the pale-yellow glow, the egg-shaped object of quartz-like glass was shattered by a flying fragment of one of the interstellar ships.

Realizing that he was about doomed, he had word sent back that he was going to try to destroy yet one more of the globular ships of space with his own mighty interstellar ship. He did not thing of turning tail. If he had any thought of retreating, it was too late now, the bolts would pick him off before he turned. He had only a few minutes to live. He sent his last farewells winging back to Earth, to the expedition, to the Yellow Quota, and to the one whom he loved more than life itself, telling them all to carry on and not let this first setback dishearten them. He, for one, was going to show those creatures how man could die. The puffs of white vapor and red flame which were being expelled from his four huge cannon ceased, the opening closed. Swiftly his ship gained

headway. Each instant it doubled its speed.

The intelligent creatures who manned the spheres saw what Commander Keelen was about to attempt. They knew what would happen if his ship, traveling now at a large fraction of the speed of light, should hit one of their globular ships of space. The lurid flames with their accompanying bolts came from each sphere in a terrible stream. The other interstellar ship was hit and destroyed.

Commander Keelen's mighty ship struck a globular ship of space. There was a brilliant flare of light and both ships went up in a blinding, white-hot mass of flaming gas.

The new of Commander Keelen's destruction reached the first of the expedition. The Yellow Quota, gritting their teeth, started forward. They were heading straight for the spheres to avenge him. They wouldn't be caught by surprise.

An hour later word reached Commander Ureena that the co-commander of the Yellow forces with eleven ships had been destroyed, had gone down bravely to death. As soon as she received the message she slackened speed and swerved from the course she was following, and headed in the direction of the spheres. She, too, was going to avenge the death of her betrothed and the thousands sunk in the state of suspended animation who would never know what struck them. Behind her streamed a thousand ships of her own quota.

The spheres continued in their course. The beings inside of the spheres must have reasoned that they had destroyed all of those long, slender ships that had suddenly appeared in front of them. Those long vehicles that they had encountered voyaging across the utter void of space were terrible foes. They had weapons of unlimited destructive power, the pale-yellow glow in particular. Thirty-eight of their own great ships had been destroyed, over three to every one they had conquered. While it lasted the attack had been fearful. They must have been glad that there were only a few. If they had not struck first their loss would have been much greater. They did not know what lay ahead of them, nor of the Yellow forces with Commander Ureena at the head bent upon vengeance.

The spheres again stopped their whirling forward motion. They had hardly got under way after their terrific encounter with the eleven who had gone forward to investigate, when in front of them appeared a solid mass of those long, slender ships of space. Well did they pause. They had met with only eleven out there and destroyed them, but in destroying them they had lost thirty-eight of their own colossal ships. But now in front of them appeared thousands, and there was something in the way of their coming that breathed murderous hostility.

The creatures who operated those spheres must have reasoned that retreat was the better part of valor. If there had only been a few in front of them—well, that would have been different. They turned and headed at right angles, the direction from which Commander Ureena with her Yellow Quota would soon appear.

The men of the Yellow legions were after them with swiftly increas-

ing speed. The rest of the expedition were also speeding up from their immense distances to lend their aid. Those globular ships of space would certainly rue the day they had met with the Second Great Expedition.

Again did the globular ships of space pause. Were the whole heavens filled with those long, slender ships? In front of them appeared the forces of the Yellow Quota, at one side, hardly visible, came the ships of the White Female Quota; while the Black legions, out of sight, followed.

They could not go forward, and at their back, massed in solid formation, came the ships carrying the men. Again they made a quarter of a turn, back in the general direction of Sirius. From a full stop they picked up their speed in an amazing fashion. Their speed was great, but not as great as the speed which the long, slender ships of the Second Great Expedition could attain.

Commander Ureena and her legions, who now led all the others in nearness to the spheres, were slowly overtaking them. Those in command of the spheres realized it. About one hundred of the globular ships of space fell back behind the others and came to a gradual stop to hold back the vengeful hosts of man for a while. From each of the spheres the lurid flame with its accompanying bolts flashed from them in a death-dealing stream. The space in front of the pursuing Yellow Quota was being strewn

with those ship destroying missiles. Ship after ship crumpled up, became partially incandescent and exploded.

From the long, slender interstellar ships of the Yellow Quota at their heels the pale-yellow glow from the egg-shaped thing in front of each ship began to make its appearance. They began to touch sphere after sphere and enveloped them with their golden glow—and then they were gone. The fleet did slacken its speed, though all around them ship after ship met bolts in headlong collision and were destroyed. Soon were the hundred globular ships of space that had sought to bar the avenging hosts of man annihilated. With renewed speed the earth's ships were after the rest.

The women officers of the Yellow Quota were mad to destroy. They held that death was far too good for the creatures who were directly responsible for the death of Commander Keelen and the others in the first eleven ships.

Two-thirds of the remaining spheres slackened their speed in their headlong retreat to try to hold back the ships from Earth. The globular ships of space drew away from each other and formed a mighty barrier. Then they began to blaze away with every weapon they had. They were fighting desperately now, even as cornered rats will fight valiantly against overwhelming odds. The speed in which the hundred spheres had been despatched showed all too plainly what was in store for them. Yet they appeared willing to sacrifice themselves so that a few might excape.

Man was not having it all his own way. Though the pale-yellow glow destroyed sphere after sphere and their cannon riddled ship after ship, their long slender interstellar ships met the bolts and were destroyed by the hundreds. In the eagerness that the women of the Yellow Quota were to get at them they were even colliding with each other. That region was swiftly becoming a whirling mass of flying metal of destroyed ships. One by one the spheres met their doom. The wall of spheres held up the Second Great Expedition for some time.

After wiping out all those who had sought to bar their way, the expedition looked around to reek their vengeance upon the rest, but there was no sign of them. Even their delicate instrument could not detect them. They had disappeared.

The ships of each zone resumed some semblance of order. The Yellow forces, being in the forefront, were hit the hardest. Rolls were called. Commander Ureena's ship did not answer. Her ship had been struck early. Two hundred and forty-one ships carrying two million, four hundred and ten thousand human beings had been destroyed.

After two temporary leaders were chosen to lead the Yellow forces, the Second Great Expedition resumed its way toward the ringed world that circled bright Sirius and its fainter companion.

Time passed swiftly. The members of the expedition were wiser now. The belief in the emptiness of space was discarded. An intense vigilance was being kept. They would not be caught napping a second time, nor would they foolishly approach any body traveling through space. At a safe distance they could use their

pale-yellow glow of destruction to remove it from their path.

Sirius now lit up the void of space with its white glow. The small, dense companion of Sirius stood out faintly when shielded from its white rays. Some of the larger planets would soon be made out also. Two more months and their long, hazardous journey would be at an end. The more dangerous task of landing upon that ringed world and subduing its inhabitants was yet before them.

In front of the expedition without the slightest warning there suddenly flashed a score or so of the globular ships of space. They were very small, not more than one hundred feet in diameter, and extremely swift. Two of their number turned and headed for Sirius, the rest kept on the course they had been traveling before they flashed across the sight of the expedition. Twenty ships gave chase, but the tiny spheres outdistanced them easily. More and more of the tiny spheres appeared. They made no move to attack. They were watching the expedition as it approached. Speed was their only defense. They outdistanced the pale-yellow glow. Some were cornered and destroyed, the rest sped back to their world to warn them of the immense force that was approaching.

Scouts were thrown out far ahead of the expedition. The ships came closer together. They were ready for anything. Nothing happened.

Another month passed. A jumbled, indistinct warning was received by man to halt. A ship, one of their scouts, came hurtling back, fast upon the heels of the message it had sent, to warn the expedition that many thousands of those huge globular ships that they had met and defeated out in the void between the solar system and Sirius were heading straight for the expedition. Their number was legion.

The expedition came to a gradual stop. They spread out far and wide. The forefront of each ship opened and the egg-shaped object from which the pale-yellow glow emanated stood forth. The four circular holes farther back in each ship were also in evidence. They would get a royal welcome.

From the scouts still far in the front of the main force came word that the globular ships of space were attended by millions of tiny spheres. The scouts were retreating in front of them as fast as they could. No lurid flame with its accompanying bolt had yet been shot from the spheres.

A day—twenty-four hours—passed. The defenders were drawing near to where the Second Great Expedition lay motionless in space. They were coming to give battle. In the great telescopes aboard each long interstellar ship of the expedition they could just be made out. Their speed was slackening.

They were almost within the utmost limit of the range of the pale-yellow glow when, at the very last moment, they stopped, turned and fled back in the direction from which they had come. Not one of their missiles was shot at the expedition that lay awaiting them motionless in space. The original intention of those in the spheres had probably been to hold off the invading forces from Earth and do battle with them far from their own world.

The six commanders, thinking that it was some kind of a trap, ordered the ships to move cautiously forward. With their weapons they were confident to cope with any surprise they might encounter. More scouts were thrown ahead.

Countless hours passed. The officers stuck to their posts. Fatigue was forgotten. Time was forgotten. The discomforts of the body were forgotten. The ringed planet could be made out at last. Those at the eye-pieces of the telescopes saw thousands of the huge globular ships of space separate themselves from the ring of moonlets that circled that world and leave its neighborhood, going in the opposite direction from which the expedition were approaching. They seemed to be abandoning their world. They preferred retreat rather than to stay and face the Second Great Expedition. The survivors of those they had met out in the void of space must have returned with terrible tales. A lesson in warfare had been taught to them which they could not forget.

The expedition made no move to follow the spheres which were leaving the vicinity of Sirius. The ships of the expedition came closer and closer, searching the surface of that world for any suspicious sign. Through their powerful telescopes they scrutinized the surface of that world most minutely. When satisfied that there could be no trap, half of the officers of each ship went into the large chambers where the rank and file of the expedition lay in the state of suspended animation and began to inject the antidote to the drugs which had caused the condition that so closely resembled death.

The people who had lain down healthy and overweight were now as gaunt as skeletons. They could not rise from their bunks, or even lift their arms. For days they had to be fed and cared for before they could move weakly about. The interstellar ships, meanwhile, hung poised some distance from the planet.

Some regained their strength faster than others and were able to help the officers. Many had a relapse and died, their systems unable to stand the antidote, which was a very powerful drug. Those who recovered grew stronger and at last completely recovered.

The thousands of interstellar ships from Earth drew closer to the ringed world. Just outside of the atmosphere they circled it. Very slowly they entered into the atmosphere. From any spot on the surface of that world the inhabitants could see one or two interstellar ships sinking toward them. They were doomed. Telescopes pointing downward showed the creatures of that world moving about feverishly. The interstellar ships sank still lower.

At various points of that world thousands of tiny ships of air rose and started firing their weapons at the ships from Earth. The great guns at the forward end of each interstellar ship destroyed them. More rose and they in turn were destroyed. Guns roared from below. Bombs were dropped, wiping out the guns. At last silence reigned. No more tiny ships rose, no more guns roared at the invaders. All activity in the cities ceased. For forty-eight hours the Second Great Expedition hung men-

acing above the surface of that ringed world, waiting.

The interstellar ships dropped down until they were only two miles above the surface. The large doors in the sides of the ships opened and men equipped with individual flying wings strapped upon their backs stepped out of the ships and flew down. In a wide strap around their waists they carried a score of tiny but extremely powerful bombs. They were the rank and file of the expedition and fluttered down like a plague of locusts, destroying everything.

When satisfied that no living thing remained upon that world, they began to explore the wrecked cities of the former owners. Every one was eager to stretch his legs upon solid ground once again.

The surface of that world was covered with the bodies of the intelligent creatures, who had inhabited it. On Earth there were creatures who resembled them a little. The inhabitants looked like giant hairy tarantulas, over a hundred times larger than the largest tarantula that ever existed on Earth. There was not one living spider-like creature to be found, though there were countless millions of them in various stages of putrefaction strewn along the thoroughfares of their queer citis. Millions of them it was found had killed themselves long before the rank and file started dropping their bombs.

Realizing his mistake too late, man searched in every nook and cranny of that world in the hope of finding some of them alive. Their civilization was great and much could have been learned from them. They found books composed of thin metal plates covered with strange script. Men and women were set to the task of deciphering them.

Meanwhile the men and women were clearing those strange cities away and plowing under the surface of that world, probably the first time its surface ever felt the plow, and getting ready to plant the seeds which they had brought with them.

The men and women who were set to work to decipher the books found the key. The whole history of the conquered world was being rapidly unfolded to man. He found that those intelligent spiders were equal to him in intelligence. In metal working and various sciences they were even ahead of him.

In some of the older records it told of the first two interstellar ships which came to their world and how the crew was destroyed, then it told farther on how the ten who had come seeking the two had been lured down from their great height and destroyed by using the first two ships as a decoy. Then it told how they learned the secret of interstellar travel from the interstellar ships they had brought down. With that knowledge they built small ships and visited the small moonlets that composed the ring around their world. They hollowed the interior of some of the moonlets and fitted in a driving mechanism similar to the driving mechanism of the long, slender vehicles that had come to them from another world. They, too, were going to visit other worlds.

In other records of a later date it was learned that the spider-like creatures were making preparations to in-

vade distant worlds that circled a yellow dwarf star that was but nine light years away—our sun! The hundreds of huge globular ships—larger hollowed out moonlets equipped with a powerful driving mechanism of rays—that the expedition had met and all but destroyed in the open void of space between Sirius and the solar system, were but the first vanguard of the invaders.

The Second Great Expedition was just in time!

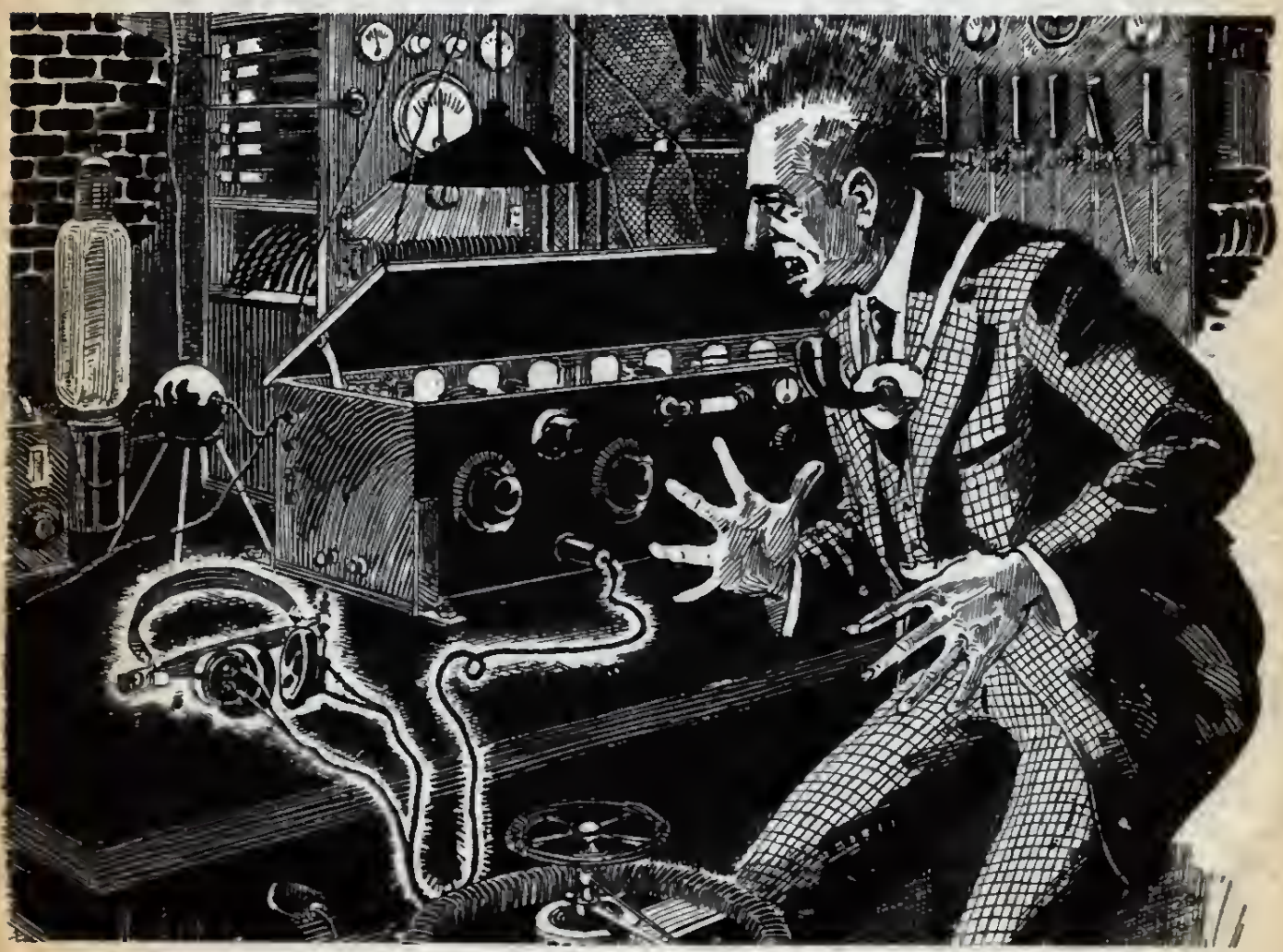
After the second crop was harvested and everything going well on the ringed world, the leaders sent four hundred of the long interstellar ships back to earth to return with live stock they were desperately in need of. Many thousands of animals could be brought back with the aid of the drugs inducing the state of suspended animation.

When the men returned to Earth, thirty-one years after they had first started out with the expedition, they found the inhabitants of the three zones busily engaged in planning the Third Great Expedition, a greater expedition than those preceding it, scheduled to start a thousand years hence!

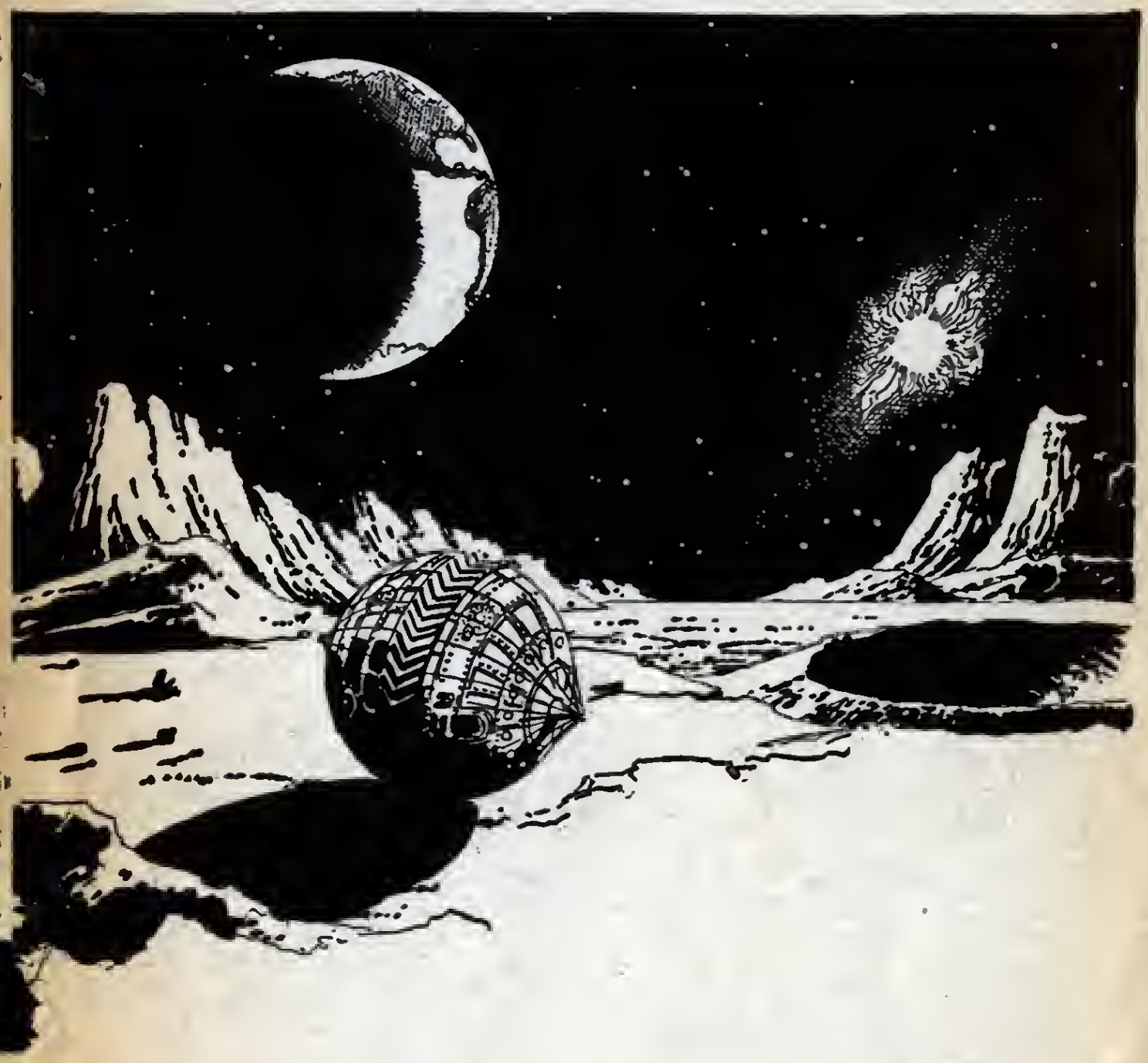
The End

A PORTFOLIO: BARON MUNCHAUSEN'S SCIENTIFIC ADVENTURES by HUGO GERNSBACK Illustrated by FRANK R. PAUL

This series originally appeared in 1915 in the ELECTRICAL EXPERIMENTER. *Presented here is a portfolio of the original illustrations by Frank R. Paul extracted from the series as it later appeared in* AMAZING STORIES *in 1928.*



Münchhausen on the Moon

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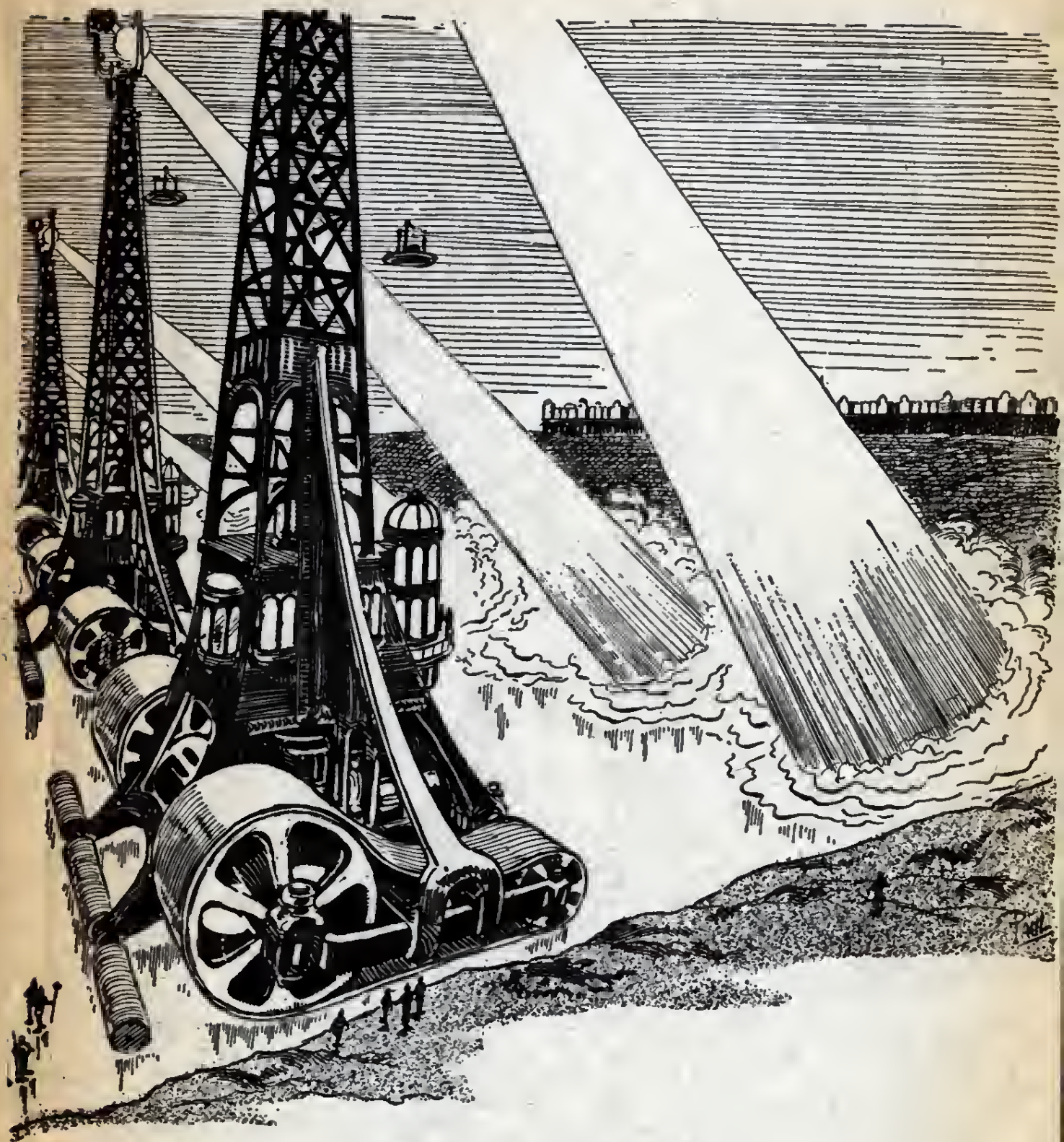
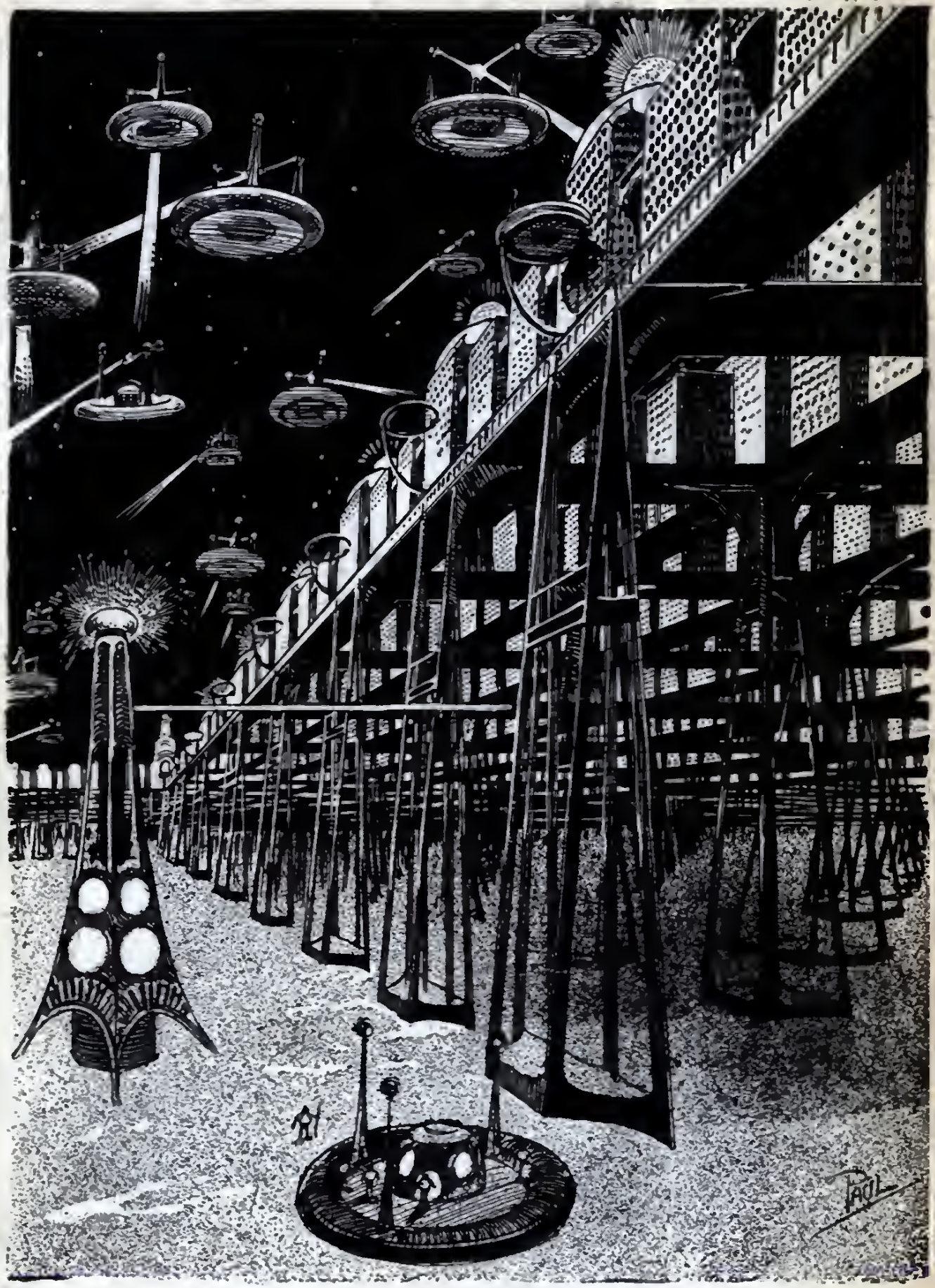


How the Martian Canals Are Built

Martian Amusements

Münchhausen is Taught "Martian"



The Cities of Mars